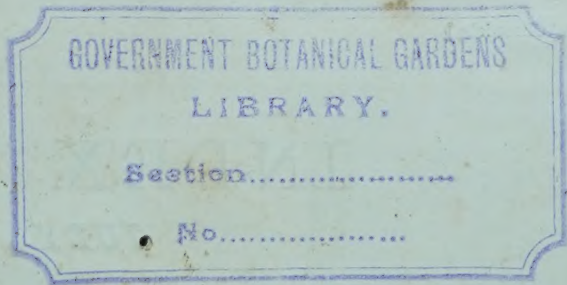


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V. 24

December 31, 1898.]



THE

GARDENERS' CHRONICLE

A ^{7.}Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(ESTABLISHED IN 1841.)

VOL. XXIV.—THIRD SERIES.

JULY TO DECEMBER, 1898.

LONDON:

41, WELLINGTON STREET, COVENT GARDEN, W.C.

1898.

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THE

Gardeners' Chronicle.

SATURDAY, JULY 2, 1898.

CLIVEDEN, MAIDENHEAD.

CLIVEDEN can be seen in all its glory in the last week of May, and the early days of June. It could be seen at a great advantage recently, as the rains had quickened the growth of tree, shrub, and grass, and in the veering wind and shade of a May afternoon, the stretches of verdure gleamed in the sunshine, and anon the hanging woods darkened in changing tones, which seemed to vary, not only from hour to hour, but from moment, as fleecy clouds budded across the sky carried before the brisk easterly wind. Below the woods could be caught a glimpse of the silvery Thames, winding its way towards the Royal borough in the distance. Flower, tree, and shrub mingled with the embrace of greenery of the woods, and from the clump of trees, among which the Horse-chestnut stood up tall and strong, sounded the ocsin of the summer time—"the cuckoo's lithesome note."

The park and woods of Cliveden occupy the summit and slope of a lofty ridge which overhangs the river, presenting to view a scene of picturesque beauty scarcely equalled in this part of England. The mansion is built on a broad terrace, which rises above the lawn on the heights, commanding a prospect not inferior to that from the north terrace of Windsor Castle, but looking a different way. The original edifice was built in the reign of Charles II., by George Villiers, Duke of Buckingham, the dissolute courtier who has been immortalised by Dryden and Pope in some of their most powerful passages of satire. It was to this place that he conducted the Countess of Shrewsbury after the murder of her husband, in a duel, of which she was a spectator, disguised as a page, and holding the horse of her paramour. The house built by Villiers was one of red-brick with stone dressings, having a noble terrace 433 feet in length, with square wings and sweeping colonnades. It was burnt down in 1795 by the carelessness of a maidservant reading a novel in bed.

In 1830 Cliveden was rebuilt by Sir George Warrender, of Lock End, from whom it was afterwards purchased by the Duke of Sutherland. Another conflagration in 1849 having destroyed the mansion erected by Sir George Warrender, the present structure was built by his Grace, the architect being the late Sir Charles Barry, whose design for the centre is said to have been suggested by that of Inigo Jones for old Somerset House. The estate eventually passed into the hands of the Duke of Westminster, who a few years ago disposed of it to W. Waldorf Astor, Esq., who now resides there. Under the capable management of Mr. A. B. Wadds, the gardens and grounds are in the very best condition, and at no previous visit has the place been seen to better advantage. To go into full details of every feature would

require an immense space; it is possible to notice a few leading ones.

A new kitchen-garden of considerable extent, with a solid wall all round, laid out by Mr. Wadds three years ago, is now of considerable value as a source of production. It has a slight slope to the west, and, as is usually the case, it is in two main divisions, divided in the centre by a broad gravelled walk, with spacious side-walks, and a broad border all round. On the north wall are Plums and Morello Cherries, on the south Peaches and Nectarines, on the east Apricots, and on the west Pears and a few Cherries. The trees on walls are doing remarkably well, and getting into a fine bearing condition. Of Cherries, Géant de Hedelfinger, a large and late black variety, is a vigorous grower, and bearing freely; Early Rivers is this season a shy bearer.

Vegetables are in great demand at Cliveden, and large quantities are forced in early spring. All the growing crops in the open looked remarkably well, and Mr. Wadds spoke very highly of Veitch's Extra Early Pea for supplying a first crop. Beck's Gem, Chelsea Gem, and other varieties are largely grown for a supply. Mr. Wadds cultivates a select stock of Ellam's Early Dwarf Cabbage, and by sowing the first week in July is able to cut nice Cabbages before Christmas; a sowing made the first week in August gives the spring supply; and a sowing is also made in April for early autumn use. On an east border is a very good herb-garden stocked with all the sorts used for culinary purposes, a large supply having to be provided.

Passing from here, and crossing a grassy glade, a new road is reached, by which access is had to the large circular fruit garden abutting on the road from Taplow. This is quite unique in its way. All round it is an iron-palisading 5 feet in height, and covered overhead by a 1-inch mesh wire-netting, resting upon solid supports stretching from side to side. This is done to keep the birds from attacking the fruit, there being trees and shrubs round the garden. This circular garden is 85 yards in diameter, with two main walks of turf crossing each other in the centre, leading to a circular grass-walk all round with a 15-foot border between it and the palisading. It is thus divided in the centre into four main segments. Cordon Apples, Pears, Plums, and Cherries are trained over arches thrown across the turf walks, and the segments are variously planted; Apples here, Plums there, Cherries in another place, and so on.

There is a plantation of American Blackberries treated exactly as Raspberries, such as Kittatiny, Wilson Jr., and laciniatus. The first-named is the earliest, and has the best flavour. The fruit has not the large core of Wilson Jr., and is of a more robust constitution. Wilson Jr. follows this, and laciniatus is the latest, and makes a good succession till the wild Blackberries are ripe. It will be remembered that Mr. Wadds received an Award of Merit for fruit of these Blackberries at a meeting of the Royal Horticultural Society in August last. Generally, there is a good set of fruit in this garden, the wire-covering overhead serving as a protection against late frosts. The condition of the trees suggests good cultivation.

On the outside border are Red Currants and Gooseberries on the sunny side, the latter including several standards, with Black Currants and Raspberries on the cool-side, all promising for heavy crops. In certain open spaces in the centre are plantations of Strawberries. Cleanliness and order could be observed on every hand.

Was ever such a floral feast of Pansies pre-

sented to view before as that which bursts upon the sight when the terrace is reached? Mr. Wadds calculated there is an aggregate of 60,000 plants in flower, a large number in the long winding beds on the terrace, the remainder in the long stretch of beds stretching away along the green glade for a considerable extent. There were eight beds in duplicate. The first pair had a centre of Roses, a grass walk round, and then a 4 feet 6 inches border of Souvenir Pansy, light blue. The next pair had scarlet Rhododendrons, grass, and a border of equal width of Yellow Seedling Pansy. The third pair, Roses, bordered also with Roses. The fourth pair, white Rhododendrons, bordered by white Pansy, The Dove. The fifth pair had Tea Roses, and a border of Mauve Queen Pansy. The sixth pair, scarlet Rhododendrons, and a Celestial Blue Pansy as an edging. The seventh pair, like the third, were wholly of Roses. The eighth pair had white Rhododendrons, with a border of Cloth of Gold Pansy.

The series of beds were admirable illustrations of the floriferousness of the Pansy, and its adaptability for a spring and early summer display. Each border was composed of some 2,000 plants. By the end of June or early in July the Pansies are removed, and Asters, in colours and as numerous as employed, take their place. In addition there is a large circular bed in four divisions, each having a centre of Niphetos Rose, edged with yellow Pansy, and also a number of small circular beds with clipped Box edgings, filled with different coloured Pansies.

Under the terrace are the long raised beds, with a winding edge, and consequently of varying widths, edged with Ivy which forms a kind of wall; next to this a line of Aubrietia, and then ribbon lines of Violas and Pansies—first, Countess of Hopetoun, white; Mauve Queen, Cloth of Gold, Cliveden purple, Sovereign, The Duke, and others, each bed containing 15,000 plants all in splendid bloom, and forming a floral spectacle rarely seen.

In one of the long, low, span-roofed intermediate houses was a remarkable sight formed by a few plants of Begonia corallina, a rare species, and one of the handsomest of the shrubby kinds, trained up the uprights, and then all along under the apex of the roof, where it had formed dense festoons of bright coral-red blossoms, extending the length of several yards. Mr. Wadds said it was never out of flower; and one would not wish it even should be, for it forms a spectacle of rare beauty.

In every house devoted to plant-culture there were abundant evidences of high and successful cultivation, though there is an enormous demand for house decoration. Malmaison Carnations are a fine feature; some plants of Achimenes longiflora were splendidly bloomed. In the fruit-houses there were fine crops of Grapes, Peaches, Nectarines, Figs, Melons, &c.; and the space devoted to Tomatos and Cucumbers is very great, the demand being enormous.

The herbaceous garden, laid-out and planted by Mr. Wadds, is 190 yards in length by 28 yards in width, with turf-walks the whole length, which contains a representative collection, especially of those subjects which are adapted for cutting. It has been my pleasure to visit Cliveden on various occasions during the past thirty years, but I never before saw the place in better condition than at present, or more delightfully furnished. All the best traditions of the spring gardening, as carried out by John Fleming, are maintained by Mr. Wadds; every portion of the gardens under his care does him the greatest credit. R. D.

NEW OR NOTEWORTHY PLANTS.

CYMBIDIUM HUTTONI, Bth.

THIS remarkable Orchid, which, I believe, is not to be found in European collections, was first described by Hooker as *Grammangis Huttoni*. Its habitus affords the cooler mountain regions of the western part of Java, where, however, it is by no means common. Some years ago Dr. Konderz brought a living plant from Celebes. The pseudo-bulbs are naked, large, much compressed, ovoid, and bear usually three erect, lanceolate, leathery leaves at the top. The scapes are pendulous and equal, 8 inches long, and two-flowered; the flowers are not widely opened, and measure $1\frac{1}{2}$ inches in diameter. The upper sepal is broadly oblong, acute, concave; the lateral sepals are a little narrower, acute, the apical part is curved outward. The petals are lanceolate, acute, the apical half convex and reflexed. Lip erect, three-lobed, the side lobes are erect, the front lobe is curved downward, and warty. In the centre of the lip is a two-ridged crest. The sepals, the basal half of the petals, and the lips are dull light greyish, densely spotted with dull blackish-violet; the apical half of the petals is of a uniform blackish-violet. The column is arched, long, and blackish-purple, the anthers yellowish with minute purple spots.

Just as in *Grammatophyllum*, *Acriopsis*, and other Orchids, the roots produce numerous upright white secondary rootlets, that soon die off. By this, rootlets, dead leaves, twigs, &c., are retained, and form humus that the plant needs for its nourishment. It is very curious that the whole plant exhales a very peculiar, something patchouly-like odour; the odour of the flowers is also very singular, but not disagreeable. *Cymbidium Huttoni* is not to be reckoned among the fine or lovely Orchids, but as a curiosity it may find a place in the collections. *J. J. Smith, Buitenzorg (Java), May, 1898.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT CAMBRIDGE LODGE, CAMBERWELL.

THE collection of R. I. Measures, Esq., thanks to the skilful treatment of his enthusiastic gardener, Mr. H. J. Chapman, is famed for its complete set of Masdevallias, both of showy and of botanical species; and for the number of rare plants usually associated with Masdevallias, such as *Restrepia*, *Pleurothallis*, *Stelis*, *Octomeria*, &c., which it contains. It also affords many remarkable instances of sets of plants flourishing in the foggy suburban district of Camberwell, with which cultivators in some of the most salubrious spots in the British Isles utterly fail. Of these may be noted the collection of fine and sturdy plants of most of the species of *Phalaenopsis*, which now flower profusely, and bear large, fleshy and perfect leaves, notwithstanding the fact that some years ago, when Mr. Chapman entered on his charge, many of them were almost leafless, and otherwise in a very bad state. As plants of that kind can be re-established at Camberwell, growers in more favoured situations ought not to despair.

Another instance is the large bed of varieties of *Vanda suavis* and *V. tricolor*, which extends through two houses, the plants being in fine health, and bearing rich green leaves down to the pots, a few of them being already in flower. Of the same nature are a collection of East Indian *Aërides*, *Vandas*, *Saccolabiums*, &c., which are failures in many places, probably because they are kept too hot in the winter and too airy in spring and summer, which is their proper growing season. In flower among them are the fine *Saccolabium ampullaceum Moulmeinense*, of *Rollisson's Catalogue*, 1875, a giant compared with the ordinary form; *Vanda Parishii Marriottiana*, with several spikes; *Aeranthus Leonis*, with many spikes of its fragrant white flowers; several *A. modestus* and other species. Overhead, suspended so as to be nearer the light, are a fine series of varieties of hybrid *Cattleyas* and *Laelio-Cattleyas*, among which were

noted *L.-C. × Lady Wigan*, *L.-C. × Andreana superba*, *L.-C. × Sallieri*, and other fine kinds; also the beautiful white *Cattleya labiata*, *R. I. Measures*, *C. × Hardyana*, &c.

The Masdevallias are divided among three houses according to their requirements, the collection of the *Chimæra* section being suspended in the house, the stages of which are occupied by the large specimens of *Cymbidiums* now out of bloom. Among those of this section in bloom were a fine set of varieties of *M. Chimæra*, including *Roezli*, *Winniana*, &c. Of allied kinds in bloom were *M. bella*, the original specimen from Mr. Lee's collection, the unique *M. trinema*, figured in the *Gardeners' Chronicle*, 1890, p. 268, as *M. Lowi*, *M. Nycterinia*, *M. Carderi*, *M. Houtteana*, *M. caudata*, *M. c. xanthocorys*, *M. c. Shuttleworthi*, &c. Suspended with them and flowering profusely are the varieties of *Odontoglossum citreumum*.

In the lean-to Masdevallia-house there is a brilliant show of varieties of *M. Harryana*, the richest scarlet being *M. H. "Comet,"* the palest *M. H. lilacina*, *M. H. roseo-violacea*, and the apricot-coloured *M. H. armeniaca*. The forms of *M. ignea* were almost as showy and varied, and of others in bloom were noted *M. × Cassiope*, *M. × Hinckiana*, *M. × Gelseniana*, *M. × Ellisiana*, *M. × Stella*, *M. pulvinaris*, *M. Wageriana*, *M. cucullata*, *M. oethodes*, some very brilliant *M. amabilis*, &c.

Of the lesser species in the other house in bloom were the rare and pretty Masdevallia *O'Brieniana*, *M. gemmata*, *M. triaristella*, *M. simula*, *M. hieroglyphica*, *M. infracta purpurea*, and others of that class.

In the long *Cattleya*-house there was a good show of *Cattleya Mossiæ*, *C. M. Reineckiana*, *C. Mendeli*, and a magnificent dark variety of *Cattleya labiata*, the first to flower of a new importation.

Also in bloom in the intermediate-houses is a splendid lot of *Miltonia vexillaria* in perfect health, notwithstanding the fact that the protracted dull weather gave Mr. Chapman much anxiety about them, and some of the other species. In one house is a large batch of *Miltonia Roezli*, principally the pure white kind, and well furnished with its pretty rose-scented flowers; a healthy lot of *Vanda teres* in flower, and profusely-flowered *Dendrobium Dearei*.

The *Phalaenopsis*-house has a fine lot of plants in perfect health, some *P. amabilis* being in bloom. With them in flower or bud *Ceologyne pandurata*, *C. Dayana*, *Oncidium Papilio*, and *O. Krameri*, *Calanthe veratrifolia*, &c. And in the most perfect health a number of fine plants of *Bolleas* and *Pescatoreas*, including *P. Klabechorum*, *P. Lehmanni*, *P. Schroderiana*, &c. Another instance of what intelligent culture may do with delicate subjects.

Other remarkable things in the collection are a fine set of insectivorous plants, *Sarracenias*, *Droseras*, *Cephalotus*, &c.; a very healthy batch of *Disa grandiflora*, a pretty unheated low house filled with *Todeas*, in splendid condition; and in the other houses of remarkably well-flowered plants were the now rare yellow *Oncidium sessile*, a fine *Laelio-Cattleya × Schilleriana*, and a large number of *Cypripediums*, both species and hybrids.

The raising of hybrid Orchids, in which Mr. Chapman has been so successful, is being continued steadily, and many new kinds are approaching maturity, while thousands of small ones are coming on.

CATTLEYA MOSSIE AT MESSRS. HUGH LOW & CO.'S NURSERY.

This grand old Orchid is just now in excellent condition at the Bush Hill Park Nursery of Messrs. H. Low & Co., and a walk through the houses there gives the visitor an opportunity of feasting his eyes on a sight that is seldom met with, and that cannot be matched at the present time anywhere in the neighbourhood of the metropolis. The removal of the plants from Clapton, and the establishing of imported plants in the fresh and purer air, have become absolutely essential, and little more need be said than that the step was the right one, and that the results have justified the step.

Some flowers noted as we walked through are of the true old type, if such a statement may be permitted, that is, one's memory at the sight of many runs back to some flowers of earlier importations;

there are others, however, that seem quite fresh both in colour, markings, and general appearance. Among such I noticed the lovely *C. M. Arnoldiana* having pure white sepals and petals, the latter broad and of a very stout substance, the charm, however, being in the lip, which is of great width, the throat of a deep orange colour, with purple lines running well through it; the first part of the labellum is of deep purple, with deeper coloured streaks over the whole of it. A flower of great substance, measuring just 8 inches across. *C. M. Reineckiana* is in many respects similar, but having less purple in the labellum—still, a most lovely form. Other forms have deep coloured labellums, with yellow throat; with others the yellow prevails, and but little of the purple is present.

Among the thousands of flowers just now open, the most exacting could find forms to suit them; to attempt to describe them, however, is a task beyond ordinary powers, and would avail little. Of the *C. Mendeli*, it must also be said the blooms are of immense size and vigour, stout and broad in every segment. I have one now before me with most charming mauve-colour, sepals and petals perfect in every particular, the beauty of this one consists in the deep purple of the labellum, intensely dark on the lip, being carried right round the upper portion, so that the whole of this limb has a deep purple margin, which adds much to its beauty and distinction. Another form of great size and beauty, with a labellum of intense purple tint, sharply defined from the yellow throat, strikes one at once; but the great number is bewildering. One thing that struck me was the clean, healthy appearance of all the plants, the freedom of growth, the stout pseudo-bulbs, and leather-like looking leaves—plants which when out of flower are attractive and pleasing, full of roots, and always promising better things.

Among so many plants deserving of mention, I must allude to *Oncidium macranthum*; these have grown freely, bulbs of fine size and stout leaves, and are now full of their choice yellow and purple flowers. To my mind this is one of the most showy of all the *Oncidiums*, and if to keep and flower it year after year is a proof of excellent culture and attention, I have no fear of its continuing to prosper at Bush Hill. Of the *Odontoglossum crispum*, it is only just needful to say that many thousands of this lovely Orchid are in robust health, some of the specimen plants having bulbs of unusual size and plumpness. The spikes of bloom are, as might be expected, stout, numerous, and in every respect satisfactory. The middle of June is, however, rather too late to see these in all their freshness and beauty, and what one can note just now is but the end of the spring display; then the show during March, April, and May, must have been superb. Of two seedling *Cypripediums*, *C. l'Ansoni* and *Mrs. Reginald Young*, I say little. These, I anticipate, will be at the Drill Hall on Tuesday, the 27th, when they will come under the notice of the committee, whose opinion on their merits will, I venture to think, be a favourable one. As this nursery has so recently been described in your pages, it is not necessary again to mention the number and size of the houses, the immense quantity of plants so well done, and the additions constantly being made. I would, however, say, my visit gave me intense delight, filled me with surprise, but knowing well the earlier stages of the Orchid-culture at Clapton, I was led also to expect even greater things in days to come. *W. Swan.*

ORCHID PORTRAITS.

BRASSAVOLA DIGBYANA and LAELIO-CATTLEYA DIGBYANA. TRIANÆI, *Le Moniteur Horticole*, June 10.

The following plates are issued in the last number of the *Lindenia*—

CATASETUM SPLENDENS VAR. LANSBERGEANUM, sepals straw-coloured; petals white, thickly sprinkled with minute violet spots, apex acuminate rosy violet; lip yellow, flushed with brown, t. DCXI.

CATTLEYA TRIANÆI, VARS., t. DCXII.

CYPRIPEDIUM LEBRUNIANUM × L. Linden, apparently a natural hybrid between *C. Spicerianum* and *C. purpuratum* and sent to Brussels with a consignment of *Spicerianum*, t. DCXIII.

LÆLIO-CATTLEYA CHERIMETEFFIA X, L. Lind., sepals narrow; petals broad, spreading, pale violet, with deeper flush on the centre, base of lip convolute white, flushed with violet, anterior lobe broad, circular, undulate, rich violet with a white edge, t. DCXV.

LÆLIO-CATTLEYA HRUBYANA X, perianth segments violaceous, with a brownish streak; anterior lobe of lip spreading, rich rosy violet, t. DCX.

ODONTOGLOSSUM ADRIANÆ VAR. *CRAWSHAYANA*, a densely-spotted form, presumed to be a hybrid between *O. crispum* and *O. Hunnewellianum*, t. DCXIV.

ODONTOGLOSSUM CRISPUM VAR. *LEEMANNI*, a form with broad undulate white segments, all with large purplish-brown spots. Moortebeek, *Lindenla*, t. DCIX.

ODONTOGLOSSUM KRAMERI, Rehb. f., in *Gardeners' Chronicle*, 1868, p. 98; id. 1886, i., 756, t. DCXVI.

CARNATION SOUVENIR DE LA MALMAISON.

THIS well-known variety, certainly the best of the perpetual or Tree-Carnations, is fast claiming a large share of public favour; it would, however, be hard

the slightest trace of it, and I am inclined to congratulate myself on being victorious.

It would serve no purpose to enumerate the different antidotes, exterminators, &c., which I tried for nearly six years, many of which were accredited with highly curative properties, but which failed in each case, which failures led me to conclude that it was rather some detail in the treatment of the plants that was at fault, and my subsequent experience proved that in this I was right. I procured a stock of young layers, fairly clean, but not absolutely so; and I removed the affected parts, and adopted a system of treatment which I will now endeavour to explain, and if any of the many persons who have from time to time asked me questions concerning the cultivation of the Malmaison should read this note, I trust they will take it as an answer to their queries.

The procuring of a healthy stock should be the first consideration, and preferably young stock, and

brisker the circulation the better. Towards the autumn, winter-quarters should be selected for the plants, and this should be an airy cold glasshouse, preferably span-roofed. In this stand the plants near the glass, and maintain a dry temperature, admitting an abundance of air at all times, affording no more water than is actually necessary, and lessening the amount of it as the days shorten. A sharp look-out must be kept for the least trace of the dreaded fungus, and should it be found the removal of the affected parts should be immediately carried out. Greenfly is sometimes troublesome, but a mild fumigation at fortnightly intervals, using Richard's XL - All vaporiser, will keep this in check.

From the middle to the end of the month of January, root-action becomes more apparent, and a shift into 6-inch pots becomes a necessity. The potting-soil on this occasion should consist of two parts fibrous-loam, broken with the hand into pieces of the size of a Walnut, one par



FIG. 1.—A GROUP OF SOUVENIR DE LA MALMAISON CARNATIONS, AT DOVER HOUSE GARDENS, ROEHAMPTON.

to determine whether this popularity arises from the beauty of the flower, or to the difficulty experienced in the successful cultivation of the plant. However that may be, the fact remains that hundreds of gardeners throughout the country are engaged in growing "Malmaisons."

The chief obstacle met with in the cultivation of the plant is its liability to fall a victim to several minute funguses which, if not resolutely and persistently combated, soon disfigure, and ultimately ruin the plant. I remember the time when no such pest was known to me, when the *Souvenir de la Malmaison* Carnations were not thought much of, and the plants produced strong "grass" and huge flowers, which, like the poet's "modest wee flower," "were allowed to blush unseen."

My first acquaintance with the fungus was upon taking charge of Dover House gardens, where it was present, but in my ignorance of its ravages, I took no particular notice of it. I have since then had good reasons for remembering it, for until three years ago I have had to wage a constant war against it. I am happy to say that for the time mentioned I have not found

the present is a good time to look round and see where this may be obtained. I recommend young layers or plants, as they can be conveyed to a distance at less expense, are less costly in the first instance, and, besides having the pleasure of growing them, not much is lost should a plant die; whereas, if plants at 3s. 6d. and upwards are bought, the loss of one is a consideration. There exist various opinions as to whether layers upon being taken up should be placed in 3-inch or 6-inch flower-pots. I have produced good plants in both ways; but preferably I should recommend the former, especially to those about to begin the culture of the variety, as in this case there is less danger from affording too much water, a significant point in itself. Ample drainage is very essential; the soil should consist of two parts fibrous loam, one part leaf-mould, and half a part each of sharp sand and spent Mushroom-dung. When potted place the plants in a cold frame and keep close for a few days, no water being afforded at the roots till partial re-establishment has taken place. When that occurs air may be admitted, that is, in about a week from the date of potting; and the

peat similarly treated, with a half-part of sand and leaf-soil added, these forming the chief constituents of the soil, but, by way of adding porosity, a few pieces of charcoal with a sprinkling of ballast (burnt clay), and a 6-inch potful of Thomson's manure should be added to each wheelbarrow load of soil. The whole must be well mixed together before use. Press the soil well about the root-mass, but not making use of a rammer, which is not a safe implement in everyone's hands. These being now established plants, no coddling after repotting should be done; place a neat, green-painted stick to each plant, to which the main lead should be loosely tied, and given good weather, growth will quickly become more active, accompanied by a rapid growth of side-shoots; and these being the flower producers for next year should be well looked after, and as they grow up they should be slung up to the centre stick. It is well to thin out to the number of ten of these young shoots, which will be a sufficient number even in very strong plants. Remove all side-stem flowers as they appear, as it is better to have one really good flower than a number of puny ones. A greater quantity of water

will at that period have to be afforded, and once a week some weak manure-water will greatly benefit the plants; farm-yard liquid well diluted with soft rain-water, with as much soot added as will slightly colour the water, is a very safe stimulus.

Of late years we have, thanks to the efforts of Mr. Martin Smith, been treated to several varieties of sterling merit, which differ much in colouring from the older types, but in nearly all cases has the stout leathery foliage characteristic of the type been retained; in fact, in the case of the variety "Churchwarden," the grass is more robust than that of any Carnation known to me, while in habit it is all that could be desired, being compact, bushy, and eminently suited for low-pitched houses; Lady Grimston, Sir Evelyn Wood, Trumpeter, and Lord Rosebery might also be mentioned as being deserving of cultivation in the choicest collections. *J. F. McLeod, Roehampton.*

FLOWERING PLANTS UNDER TREES.

THE growing taste for planting flowers in an informal manner, and in parts of the garden distant from the flower-garden proper, renders the subject of planting under deciduous trees worthy of special mention. It is supposed that planting of this kind presents great difficulties, but these arise only when unsuitable plants are chosen, or the planting is performed in an unworkmanlike manner. It is not sufficient to plant weaklings from the bedding-out, or the refuse plants left over, and to merely scratch a shallow hole in the ground in which to stick them. On the contrary, the plants should be strong of their kind, and planted at the proper season; and though some plants succeed with very little preparation of the soil, others require a thorough loosening of the soil before the planting is performed.

Though flower plants will flourish in woods when not very dense, those which flower early, that is, before the leafage of the trees is complete, give the finest results. The shade of the Beech is proverbially inimical to any sort of undergrowth, still something may be done to clothe the ground beneath these trees. Nearly all of the plants mentioned in this note have been established for years in a grove of Beeches, where the trees are large-headed, and the shade dense enough to have killed all the grass that ever existed beneath them. It may be necessary to add that the lowest branches are a good height from the ground, and the plants therefore are not smothered by close shade.

I leave out Crocuses, which do well for a season or two, and then gradually disappear; and Daffodils, which do not flower freely unless the plants get a fair share of light, though the double *N. Telamonius* or *Von Sion* and the white-trumpeted *N. albicans* flower more or less freely most years.

First of all in season and in numbers comes the winter Aconite (*Eranthis hyemalis*) in countless thousands, covering large areas skirting the walk beneath the trees, and spreading far back from it and forming sheets of gold in winter. Then the Snowdrops, in lesser quantities certainly, but still plentiful enough for effectiveness, and before these have faded the blooms of *Anemone appennina* appear, grateful for the shelter provided by the overhanging branches; and then comes the almost equally attractive *A. ranunculoides* intermingled with it. It may be stated that the pheasant has a partiality for plucking off the buds of *A. appennina*, and does much harm some years. Unfortunately, neither *Anemone sylvestris* nor *A. nemorosa* thrive under the trees in our light and generally dry soil. Now, as I write in mid-May, the Wood Tulip (*T. sylvestris*) and the Primroses are passing, their places being taken with large groups of *Scilla nutans* and *S. campanulata*, both fine plants for light soils, each represented in three or four colours or shades of colours; the flesh-coloured form, *S. nutans*, makes a charming plant if planted in a group by itself. Other occupants of the woodland now in flower are the Forget-me-Not, *M. sylvestris*, which comes freely from seed sown on the surface of dug ground. Blue-eyed Mary, *Omphalodes*

verna, in its blue and white varieties, and big patches of Dog-tooth Violets coming in succession to patches of Sweet Violets. Both of the latter can be readily raised from seeds sown, like the *Myosotis*, when the seed is ripe. *Tulipa sylvestris*, it may be said, does better beneath the shade of trees than in the open, the flowers liking the shelter trees afford, and lasting longer. *Fritillarias* of species, including the Crown Imperial, do fairly well, but our land is too dry for them to make much increase, and the Crown Imperial does not flower, but the plants are conspicuous for their habit at a time when most of the undergrowth is low. Later on we get a fleeting purple tint throughout the grove from many hundreds of flower-spikes of *Campanula glomerata*, which lasts about ten days or a fortnight. *Alliums* in two or three species are interesting and bright; the St. John's-Wort, too, makes a capital undergrowth, but is a plant requiring to be kept within bounds, and not used in combination with other things. In the autumn huge corms of *Cyclamen neapolitanum* throw up hundreds of blossoms, to be succeeded by big cushions of marbled leaves. This plant should be used in the woodland as freely as Snowdrops, Primroses, and Winter Aconites, as it produces a wealth of flower at a time when flowers are getting scarce.

Under isolated specimens of the purple Beech, the native *Saxifraga granulata* forms a carpet of white, which contrasts effectively with the tender hue of the leaves of the Beech growing under great Cedars; the common Celandine is excellent, and Violets do well in similar positions. Under some Dog-wood (*Cornus sanguinea*) bushes growing on a bit of swampy ground, the pretty *Chrysosplenium alternifolium* makes an effective cushion of a golden hue, on which the red shoots and branches show up beautifully.

In addition to the native and other flowering plants I have named, there are a few others such as the *Veratrum*, *Helleborus foetidus*, Solomon's Seal, Turk's Cap Lilies, and hardy Arums, especially *italicum marmoratum*. *J. C. Tallack.*

FRENCH PEACHES.

IN the South of France the Peach grows very well in the open air, but in other regions it requires shelter on walls. The Peach is said to have been introduced into Europe from China (though no wild Peach has yet been discovered), where its culture was "venerated," and its luscious fruit held to possess the property of "eternalising life." It belongs to the Rosaceæ family. Persia also claims to be the original home of the plant—hence the name *Persica vulgaris*. Of the varieties, the name is legion, as it does not follow that the seed will reproduce the exact parental type, and new kinds are often raised in this way. There are more than 100 varieties in cultivation in France, but nurserymen limit the varieties they cultivate for sale to about a score. Even when pollination is most carefully carried out, it is found that a plant will not exactly reproduce itself. The flowers are hermaphrodite, and appear before the leaves.

In countries where the Peach-crop is plentiful, the fruit is distilled, and thus forms a profitable branch of industry. The earliest Peaches are ripe in June, and the latest may ripen even in November. Generally, cultivators of the Peach so choose varieties as to have a supply of fruit from the close of June till the end of October, and ten to fifteen selected of early and late varieties will be sufficient. Among the earliest used in France are:—The Amsden, Early Beatrice, Louise, and Alexander; then the Noblesse, Grosse Mignonne, Madeleine; and later the Galande, Belle de Paris, Reine des Vergers, Malta, Belle de Vitry, Desse Tardive, Salway, and Lord Palmerston.

The soil for Peach culture should not be too light or too heavy, but rich in lime. If the soil be heavy and moisture-holding, the Plum-stock is the best for worked plants; in other cases the Almond is more suitable as a stock, and on thin poor soils budding on the Apricot succeeds, as in the north of France. The nature of the soil has an important effect on the

quality of the fruit and the amount of the crop, as well as on the longevity of the tree. A Peach-tree may commence to bear fruit in the third year from the budding, and will continue doing so for five or six years, when decline sets in. The fruit of older trees is superior to that from young ones. If a soil be too humid or too warm, the fruit often falls before ripening, or what is nearly as bad, it acquires a bitter taste. A northern aspect is quite unsuited to the growth of Peaches, and a south-east aspect is the best; then east, south-west, and south. A western site is, in France, too much exposed to rain, and a southern one is too warm, for the Peach is capricious, and does not like sudden changes of temperature, or rapid alterations from sunshine to rain. This is the reason why Peach-trees are sheltered with screens, boards, glass, &c., from the month of February till the close of April, so as to shade them from the sun, and protect the bloom and the buds from damage by hail, snow, and frost. It is not the cold winter rains, but the spring frosts during flowering, that are dangerous. If a Peach-wall is to be erected, it should be carried to a height of 8 to 10 feet, and if not plastered, it should be faced with wooden lattice-work. The coping ought to consist of tiles, and it should project 5 to 6 inches.

The vitality of the seed of the Peach is not always certain; it disappears rapidly, hence it is customary to sow or at least pit the stones in the autumn, or store them in a cellar, or against a wall, covering them with earth or leaves. The layered stones are in April carefully removed and planted in rows in a nursery-bed at a distance of 20 to 30 inches apart, and the germ covered with soil to the depth of 3 inches.

During the first year the plant forms a long tap-root, and the stem attains a height of 2 to 3 feet. If trees are bought from a nursery they are not more than eighteen months old, straight, with well-ripened shoots and devoid of gum, and the lower shoots well developed. In planting stocks for wall Peaches the roots must be turned outwards from the wall. Budding time depends on soil, climate, and the state of the trees, but it is effected in the interval between the middle of the month of July and the middle of September. Though not a large tree—9 to 18 feet high—the Peach grows rapidly. At the commencement of every second or third winter the Peach-border, in which are the roots, is manured. At Montreuil, near Paris, which is devoted to the rearing and cultivation of Peaches, street-sweepings and horse-dung are the manures chiefly preferred; and in case of a soil that is light and warm, cow-dung replaces that of the horse. The coating of manure applied may measure from 2 to 3 inches in thickness. After the operation of pruning, tying, &c., the border is covered with straw, and it is never cropped with vegetables, and beyond an occasional hoeing to keep down weeds, nothing is done to it. The shoots of the Peach lend themselves readily to training, and hence the numerous fanciful forms cultivators give their trees. Let it be borne in mind that the tendency of the sap is to flow to the branches nearest the centre, and those that more or less approach an erect position.

The U, or as it is called, the vase form, is a favourite, as are also the palmette and the candelabra. The fan is a common form of training, and seven branches on each side of the centre can, in the course of a few years, be trained to cover a surface of forty square yards. In the vineyards of southern France, the rows of Peach-trees alternate with those of the Vine, and the precocious American varieties are in great favour there. No pruning is adopted save to remove the dead wood. The fruit on these low standards or bushes grows towards the tips of the branches. The fruits from such vineyard trees arrive in Paris at the close of the season, the costers selling them for stewing purposes at the rate of 20 centimes, or 2d., per pound. When the *Phylloxera vastatrix* destroyed the vineyards of France, many farmers planted Peach-trees, and those who did so have had no reason to regret it, although the Peach-trees do not live long. The oldest trees produce the best flavoured fruit, as has already been remarked, but great care must be given not to exhaust the

ree by over-cropping. The French gardener, like his English *confrère*, disbuds and thins the shoots of his wall-trees; and he finds it necessary, to give the desired colouring to the fruit, to remove the leaves that shade it some fifteen days before ripening. Peaches are removed with the fingers alone, and the fruit is placed in a small basket containing paper shavings or soft dry grass, or upon Vine-leaves deprived of their stalks, or on wool, the basket never having more than three layers of fruit. Before serving Peaches, it is usual to remove the down with a long soft-hair brush, and thus display the colour of the skin fully. When gathering fruit with a view to exportation, the Peach should be gathered a week or more before it is ripe, and enveloped first in tissue-

cover the incision with grafting-wax. If the roots be affected with parasitic fungus, the tree is dug up at once and burnt. For mildew on the shoots and leaves, flowers-of-sulphur is used; and tobacco-water-wash to clear off aphides.

The octroi-tax upon Peaches entering Paris is 1 franc per 2 cwt.; they mostly are the produce of La Crau, Estressin, Perpignan, and Isère. Brussels forwards excellent Peaches, both forced and from the open air, the latter coming from Hainault, where no Vines exist; she pays the same customs-dues as upon her Grapes, viz., 160 francs per 2 cwt.; if to this tax be added the expense of transport and local taxes, the total cost will amount to 207 francs. But the Peaches sell at 722 francs per 2 cwt. For

and 11 from Scotland; 19 gave no address on their papers.

Three hundred marks were allotted as a maximum, and all candidates who obtained 200 marks and upwards were placed in the first class. The total number was 87, or 45·7 per cent.

Those who received 150 and less than 200 marks were placed in the second class. The number was 61, or 32·6 per cent.

Those who obtained 100 and upwards were ranked in the third class. The number was 36, or 19·0 per cent.

The highest number of marks was awarded to Miss O. M. Harrison, of the Horticultural College, Swanley.

The great advantage of systematic training is seen in the fact that of the pupils, e.g. of the Swanley College, 24 were in the first class, and only 4 in the second. Of those of the Technical School of Stafford, there were 12 in the first and 7 in the second class; of the County School of Horticulture, Chelmsford, 8 were in the first class and 4 in the second; while of the Horticultural School, Holmes Chapel, Cheshire, 6 were in the first class and 4 in the second.

Comparing the results with those of last year, we find that the number in the first class has slightly decreased, viz. from 89 to 87. In the second class there is an increase from 55 to 61; and also in the third class from 28 to 36. Those not placed have fallen from 12 to 5. Comparing the percentages they stand as follows:—

	1897 (184).	1898 (190).
First class	48·3	45·7
Second class	29·8	32·6
Third class	15·2	19·0
Not classed	6·5	2·6

The answers were, on the whole, very satisfactorily given; and the general standard of those dealing with the Elementary Principles of Vegetable Physiology were somewhat better than was the case in 1897.

There is also a general improvement in the answers to questions referring to Practical Horticulture. Most of the students have a good general idea of the work, although a limited number only went fully into the minor details of it; but some of these details are essential to a full measure of success, and as far as possible they should be included in the answers.

GEORGE HENSLOW, }
JAS. DOUGLAS, } *Examiners.*

The questions set were as follows:—

Eight questions only to be answered: four from Division A and four from Division B.

DIVISION A.—ELEMENTARY PRINCIPLES.

1. Describe the methods of propagation of different weeds; explain why Groundsel and Chickweed and the large white-flowered Convolvulus are particularly troublesome. What are the best means of exterminating these plants?
2. Point out the importance to the plants of a good circulation of air in a hot-house, and the consequences of a stagnant condition of the atmosphere within it.
3. Describe the different functions of leaves, and the best way to secure their due performance.
4. What are the component parts of a flower, and of what use are they respectively to the plant?
5. What external conditions are favourable for inducing variations to appear in cultivated plants; and how would you proceed in order to fix any variation?
6. What parts of the flower are retained and altered in forming the fruit of the Peach, Melon, Mulberry, Fir-cone, and Pine-apple?
7. To what Natural Orders do the following trees belong:—Tulip-tree, Maple, Apricot, Ash, Laburnum, Gueldres-rose, Hornbeam, Thuia, and Evergreen Oak? Which are natives of this country?
8. Describe the structure of the bulb of the White Lily, the corm of Gladiolus, the creeping-stem of Couch-grass, the rhizome of the Flag, and the tuber of the Potato; and explain their uses to the plants.

DIVISION B.—PRACTICE.

9. Describe landscape-gardening as an art.
10. Describe the formation of a garden-lawn, and the details of the work necessary to keep it in condition during the year.
11. What are the preliminary operations necessary to the laying-out of a garden for fruit and vegetable culture? Describe the arrangement of the fruit-trees, and the method of planting them.
12. A garden having four walls facing north, south, east, and west, what varieties of fruit-trees should be planted on each? Describe their first year's pruning and training.
13. Give full details of the propagation and culture of Grape-vines and Fig-trees in pots.



FIG. 2.—BLUSH-COLOURED CARNATION SOUVENIR DE LA MALMAISON, AS GROWN AT DOVER HOUSE GARDENS, ROEHAMPTON. (SEE P. 3.)

paper, then in stronger paper, and lastly in soft, dry hay, or paper shavings or wood-wool, not more than two dozen being in a single layer in a deal box. Attention to these rules will prevent injury from shaking. Gather fruit in the morning, after the dew has disappeared; but never, if possible, when it rains.

The "gomme," or gumming, is the most serious disease from which the Peach-tree suffers, and the suddenness of the attack makes it all the more necessary to discover it in time. It is due to an excess of sap. It is not dangerous so long as it is confined to the small shoots; but when the fruit-bearing stems are affected, the loss of the tree may be feared. The gomme disease is recognised by the oozing out of a liquid-gum from spots on the bark, and the only course pursued is to cut off that portion of the branch, and

French-raised Peaches, the total cost of arriving at the Halles Centrales, or Central Markets of Paris, varies from 17 to 25 francs per 2 cwt., and the mean average selling price is 70 francs for the same weight. At Montreuil, the Peach suburb of Paris *par excellence*, the Peach-gardeners are wealthy, and their fruit is unquestionably the very best sent to the market. E. Conner.

EXAMINATION IN HORTICULTURE, 1898.

SUBJOINED is the Report of the Examiners of the Royal Horticultural Society for the year 1898:—

The Annual Examination in the Principles and Practice of Horticulture was held on April 6: 190 candidates presented themselves for examination. Of this number 155 were from all parts of England,

14. Describe the culture of Seakale, Asparagus, and French Beans; and the best method of forcing them.

15. What are the best manures for kitchen and fruit-gardens? How ought they to be applied, and when?

16. Describe the propagation and culture of Roses and Carnations intended to be cultivated under glass.

NOTICES OF BOOKS.

A TEXT BOOK OF BOTANY. By Dr. E. Strasburger, Dr. Fritz Noll, Dr. H. Schenk, and Dr. A. F. W. Schimper; translated from the German by H. C. Porter, Ph.D. (Macmillan & Co., 8vo, pp. 599, figs. 504.)

BRITISH and American students are under an obligation to Dr. Porter for his translation of this standard treatise. It is not intended for beginners, but for advanced students, and those who have need of a standard book embracing all or most of the newest discoveries and the most novel views. Morphology is studied so far as it can be phylogenetically, that is, from the ancestral or hereditary point of view, and "ontogenetically," or from the comparative study of the development and growth of existing individual plants. The former is, of course, mainly conjectural, the latter is actual.

Physiology—the action under various conditions, external and internal, of protoplasm—follows next in order. Purely physical influences, such as gravity, do not account for all the phenomena we witness, the shoot, like the ascending sap, ascends directly contrary to the influence of gravitation; the root, on the other hand, descends, and the root-stock creeps on the surface, though the physical conditions may be the same in each case. We can only suppose that the protoplasm is stimulated by light in the one case, by water in the others, to bend in the direction most beneficial at the time. To say that the movements are due to the forces of growth is to make an assertion, and leave it unsupported by evidence. Whether we admit a vital force or not, at any rate, all concur that living protoplasm is sensitive to impressions—is "irritable," as the technical phrase has it; whilst dead protoplasm is no more sensitive than any inorganic or dead substance.

The third section is devoted to "Special Botany," under which heading we have a general account of the present system of classification of plants, the arrangement followed being that of Alexander Braun, as modified by Eichler and Engler. The description of the several classes is given in a diffuse verbose style, which renders them dissertations not descriptions. This is not peculiar to this volume, but is general in modern German text-books, and copied faithfully in recent English ones. How we long, in perusing these long dissertations, for the descriptions of Linnæus without a superfluous word, and for the clear, definite statements of Lindley. The reader has to toil through a page or two—perhaps several pages—of detailed description before he can light upon any contrasting or definite statement which he can compare with others. Desirous, we will say, of knowing what Ferns are, and wherein they differ from allied orders, the reader has to read as many pages as his forefather would have had to peruse lines, to get at the required information. It is only fair to say that the present work is considerably clearer, and less wordy than many German books, and it has, as far as we can judge, been well translated. We find no mention of the discovery of spermatozoids in Cycas and in Ginkgo, so that we imagine the work was out of hand before this very important discovery was made known. As a text-book of the highest class, this work deserves, and will, we doubt not, obtain a place among the very foremost.

THE FLORA OF PERTHSHIRE. By Francis Buchanan W. White, M.D. . . . Edited by James W. H. Trail, A.M., M.D. (Printed for the Perthshire Society of Natural Science by William Blackwood & Sons.)

This is a book with an unfortunate history. The greater part was in manuscript before the death of

the author, but that manuscript was incomplete, and had not received the final revision of the writer. Professor Trail's task has therefore been no light one. He has received willing aid, which he is careful to acknowledge. Perthshire is one of the most interesting, botanically speaking, of all the counties, and a complete flora of it is a boon to local botanists and tourists. The report of an address on the origin of *The Flora of Perthshire*, by Dr. Buchanan White himself, forms an appropriate introduction to the volume; whilst the memoir will be read with much interest by those who only knew the author by name. It may be pertinent to suggest to local botanists that they should cast their eyes over the garden-wall and tell us what crops of fruit and vegetables are grown above certain levels, and what exotic trees thrive in the policies. A great deal of useful information as to local climate and its influence on vegetation might thus be obtained to supplement, and often, we doubt not, to illustrate that obtained from the wild plants. We note in passing that in many parts of Perthshire the flowers and Ivy are only fully developed in warm autumns. Possibly equally good results would arise from such investigations as are to be had from the minute study of "critical" plants. The significance of variations is no doubt all important, but when we find the "critics" holding discordant views, no two of them agreeing as to the limitations of the varieties of Water Buttercup, or brambles, for instance, it is allowable to ask whether a little more study of the variations and adaptation to environment noticed in plants under cultivation might not be desirable. It is curious to note that, while a large number of variations of *Hieracium*, *Rubus*, and other genera are mentioned, not a single variety or variation is specified in the case of the Lady Fern, scores of which are enumerated by the Fern lovers. They must surely occur in Perthshire.

ELEMENTARY BOTANY. By Percy Groom, M.A., F.L.S. (George Bell & Sons.)

The object of this little book is a good one—to awaken and improve the observant faculties, and to encourage sound deductions from what is observed. Instead of beginning with details that not one student in a hundred ever has, or can have, a chance of seeing for himself—details which must always be left for the expert to discover and correlate—the author of the present volume begins with what may be seen by any beginner with no more elaborate tools than a penknife and a pocket magnifying-glass.

Passing systematically from the simple to the more complex—from the root to the fruit—the author reviews the subject of vegetable morphology, and gives a brief summary of the main phenomena of vegetable physiology. The appendix of technical terms contains, we are told, some terms which are actually incorrect and misleading. This, we suppose, is the case with the *tigellum*, which is said to be used (by whom?) as a synonym of the word *plumule*.

A MANUAL OF AGRICULTURAL BOTANY, from the German of Dr. A. B. Frank; translated by John W. Paterson. (William Blackwood & Sons.)

In this little treatise the agricultural student is at once introduced into the mysteries of Schizophytes, Mesomycetes, Archegoniata, and such like, before he has been told how to distinguish between Barley and Rye, Swedes and Mangolds. In other words he is taught, of necessity, to rely on what other people have seen, rather than what he can see for himself. Knowledge is of little or no use unless the recipient is able to apply it. In the present work two pages at the most are devoted to the bacteria. It may be left to the reader to conjecture what amount of real knowledge can be conveyed to the agricultural student in so small a space, or how much a tyro could be expected to appreciate the extremely complex and obscure action of these infinitesimal creatures. For one who has already some knowledge of botany, and wishes to refresh his memory, this little book may be useful. It is illustrated with numerous woodcuts.

BRITISH ORCHIDS.

MR. A. D. Webster has published through Messrs. J. S. Virtue & Co., 26, Ivy Lane, a second edition of his work on this subject, to satisfy the demand for information on this most fascinating group of plants. Long before Darwin had turned his search-light on to the group, botanists were enamoured with it, and the search for and discovery, say of a bee Orchis, gave a joy not to be appreciated by the profane. In Kent, at any rate, Orchids are associated with many other distinct and interesting plants, so that the chalk downs and chalk woods of the county are sources of unspeakable delight to the harmless botanist.

Unsympathetic game-keepers are, however, a nuisance. Not only do they shoot rare birds, but they suspect innocent naturalists of crimes or procedures that never enter into their heads, and, indeed, of which in many instances they know absolutely nothing.

The text of Mr. Webster's book still requires revision; for instance, on p. 5, the name of one of the tribes is given as "Phrydeæ," an evident but none the less annoying oversight, as it is supposed to be an extract from Hooker's "Manual" (*sic*), whatever that may be. The illustrations, too, are unfortunately often of a piebald description, half black, half light, from imperfections in the process-blocks or in their preparation for the press. The cultural details are, in every case, worthy of careful consideration, and give the work its principal value, as may be judged by the following extract:—

"The Orchid-bed can be formed in a shady, quiet spot, where the various qualities of soil may be placed in a very small area, so that different species of similar requirements can grow in close proximity. The position and preparation of the bed will, however, require a little attention, and may be readily formed in any half-shady corner (constant sunshine is inimical to the growth of several Orchids) by digging into the ordinary garden soil (which we will suppose in most cases to be loam) a quantity of peat or leaf mould; this being a mixture suited to the wants of most species. In planting the tuberous or other roots, the requirements of each kind can, however, be readily attended to; it may be by adding lime or chalk to those requiring a calcareous soil, pure loam or leaf-mould where necessary, &c. Limestone blocks or boulders should, where obtainable, be half sunk in the bed in as natural a manner as possible, and against the sides of which those kinds requiring a calcareous soil may be planted with the best chance of success.

When forming this low rock-work, part of the bed should be raised above the general level of the surrounding ground, in order to meet the wants of those kinds requiring a dry soil and situation. The bed should also be carpeted with some low creeping plants, such as the Sedums, Arenarias, *Campanula hederacea*, *Linaria alpina*, or *Anagallis tenella*, all of which are not only ornamental, but preserve a cool moist surface by preventing the too speedy evaporation of moisture, a matter of much importance for the healthy development of the plants. When planting the tubers, these should not be placed at a greater depth than from 3 to 4 inches. A few species, notably *Epipactis latifolia*, the *Cephalantheras*, and one or two others having fibrous roots, are, however, exceptions to this rule, and may with advantage be placed at a depth of 6 inches in the ground; but for the various species of *Orchis*, *Habenaria*, *Ophrys*, &c., the above specified depth should never be exceeded.

Although the majority of British Orchids are found in a somewhat stiff soil, still, in my experience of them, when brought under cultivation a fair admixture of sand is highly beneficial to most species; indeed, I make it a rule when planting to surround the tuberous or other roots with a handful of rough grit or sand, which not only to a great extent prevents decay, but materially assists in the formation of roots. This precaution is all the more necessary when planting imported Orchids, the roots of which have become damaged in transit, or through carelessness in lifting."

LAYERING.

THE student of gardening desirous of discovering the origin or originator of the practice of layering, as it now exists, would doubtless have to seek for information in very remote ages. Nature herself set the example in many directions. We see it displayed liberally in Strawberries, in some Saxifrages, in various weeds, and in divers trees and shrubs. But so far as modern gardening is concerned, layering as a means of increased propagation, seems to be applied more in an artificial way than in a natural way by creating similar conditions to those produced by Nature, and deriving similar results. So profuse in natural layering is the Strawberry, that we have no reason to seek

for other methods of propagation. It more than serves all ordinary requirements; yet the Strawberry does not present quite the same aspect of layering that is found in other plants that have of necessity to be artificially treated. The Strawberry stolon produces a plant even before it does roots. No one probably has ever attempted, or even thought it worth while, attempting to induce the stolons of these plants to produce other rooted plants by making incisions into these connecting-strings, layering them into soil. Of all plants we grow in gardens, there are few on which we have to depend on layering for increase so much as the Carnation. This is particularly true of it, because it is practically everybody's flower. Yet, whether layering be applied to Rhododendrons or to Magnolias, to many similar things, as well as to trees, and, not least, to the propagation of various stocks for fruits, the principle is the same. Generally, it may be said that mere layering may be applied to them liberally, but no satisfactory results will happen unless the principle of tonguing the stems be practised. In burying stems of branches Nature often does much, but tonguing she does not, except

that the desired diversion of sap into it with the view of producing certain results may follow. Layering is not the only operation performed on plants with the object of increasing them, that naturally calls for thought and enquiry. The operation of cutting-making, so very common, and far more available for the purpose, though very much the same in all cases, is one that should command all the operator's intelligence. It is not enough to be able to do this work mechanically. It should be the aim of all to understand the physiological principles that govern it. A. D. [We may indicate a few kinds of plants which a gardener may increase at this season by layering big or little shoots and branches, viz., Vines, both ornamental-leaved and fruiting; Ivies of all kinds; Roses (not the monthly Roses readily), but especially those that make long, vigorous growths, such as the naturally climbing species and varieties; Loniceras with climbing habit; Rhododendrons hybridum, and the warm-house (Javan species and hybrids), the Alpine species and the more prostrate habited Himalayan species; Weigela sinensis; the Cotoneasters; Laurels of all species and varieties; the Ligustrums; the New Zealand Veronicas, Senecios

used to pack in Rhubarb leaves. All his goods were well grown and shown. Then there were three market-gardeners—the Atwoods—who used to grow Asparagus; and there were also Grayson, Hitchcock, Pocock, and Jessop; the last-named grower used to send very large quantities. I have seen his van loaded with bundles of Asparagus packed in the body, without any baskets being used, which I never knew any one else to do. He also produced very fine Onions and Parsnips—in fact, everything he grew was well done. Jessop used to pack his Asparagus in meadow-grass mown, no doubt, for the purpose; while Hitchcock, Grayson, Pocock, and some others packed in Rye-grass, which is a nice clean kind of packing, and I used to think that it made the Asparagus more attractive to customers. The bundling varied slightly from that now in use, and, I think I may safely say, that all bundles contained more heads than is now the case. Now, from what I have observed and read, I believe we have among British gardeners some of the best cultivators in the world, and I wish to bear record to this fact. Although in this and previous seasons large Asparagus—Giant, Victoria, or call it what you like, from abroad has realised considerably more, sometimes double the price of home-grown, it was for the simple reason that it was big, showing there is, with increased wealth of the community, a growing demand for Asparagus with big heads. Now I would ask, why cannot our own growers grow the vegetable to as large a size. It must be remembered that there are not 100 heads in a bundle of this big "grass," and, moreover, it is pale in colour, and is not, I suppose, exposed to sunshine, and may be the variety differs from that which we grow. [No; it is a matter of climate and of feeding with sewage. Ed.]

In conclusion, I feel certain if we grow it big enough, seeing what the demand now is, that we could command the trade. In the Evesham district I hear that the area under Asparagus is considerably extended, and it is estimated there are now four thousand acres under this crop, but the produce that I have seen is puny, and the market reports of the *Gardeners' Chronicle* show that it fetches inferior prices. T. P., June 25, 1898.

PACKING FRUIT FOR MARKET.

The growers in their methods of marketing fruit, we are pleased to see, are taking a step in the right direction. Strawberries are being marketed in fancy handle-baskets different to anything that has been seen before, and we trust they will be followed with other fruits that will allow of it throughout the season. Retailers of fruit know how much better fruit opens up the less it is handled, and also how much more attractive it is to the would-be purchaser. We trust, therefore, that the trade generally will take to this new method, which we have advocated from the first both as regards baskets and boxes. Packing selected fruit in small quantities and in such a form that they can be readily handled, although perhaps putting the grower to a little more trouble, is certainly more likely to bring better results all round. For this purpose there is still room for improvement in the make of both baskets and boxes for this purpose. The handle-baskets above referred to are coming from French senders; they are very light and serviceable. It can hardly be expected that anything suitable will be turned out from the English basket-makers' shops, considering the start the foreigner has got upon us, but wholesalers of this ware, who pay periodical visits to the various basket-making centres, might do much towards bringing about this improved method of marketing in small quantities, even if they had baskets made to their own design. *The Journal of Greengrocery, Fruit, and Flowers.*

STAPELIA LONGIDENS.

ON the occasion of the publication of Mr. N. E. Brown's description of this new species in our issue for September 21, 1895, we were unable to procure a figure of the flower. We are now enabled by the kindness of Mr. Eric D. Tillett, of St. Giles' Street, Norwich, to afford our readers an illustration of this singular looking plant (see fig. 3). The plant



FIG. 3.—STAPELIA LONGIDENS, GROWN BY E. D. TILLET, ESQ., NORWICH.

in a rough way, by abrasion. It is most likely that the earliest gardeners, who first adopted artificial means to the desired end, did observe the frequent rooting which followed up on the breaking of the bark of tree or shrub stems, resulting from abrasion, and from it came the practice of tonguing. The principle of this practice lies in the absolute necessity there is for a break, though it be but partial, in the bark, to check the sap-flow, which presumably passes through the cambium bark layer. The tonguing of any stem is invariably done by an upward cut or slit towards the leafage, and not in the reverse way. The latter would probably prove useless. The tongue soon calluses over, and develops roots. Very pretty work, too, is layering, not only because it is light, but it requires considerable deftness of hand and experience in manipulation to do it properly. Few operators, however, wooden generally, but know that their labours will come to nought if the cut surfaces of the layer close up and are so buried in the soil. The cambium layer that is inevitably formed on the wound in this case becomes a species of cement, uniting the severed portions again indissolubly, and no rooting follows. It is therefore indispensable that in placing the layer into the soil the tongue or slip of partially-severed stem be separated from the main stem, when so inserted,

and others; bush fruits, although this method is not to be recommended, the production of under-ground shoots and suckers being a great nuisance; Codlin and Burrknot Apples, and many of the climbing hard-wooded plants of the greenhouse and stove. Ed.]

MARKET GARDENING.

ASPARAGUS CULTURE ABOUT LONDON.

As the Asparagus season is now practically over, the following remarks may prove interesting to readers of the *Gardeners' Chronicle*. I think it will be admitted by all who know the market trade, that there is not half the quantity grown by the market-gardeners in the London district that was the case in the late fifties and early sixties; neither is the produce so fine now as then. Many causes have brought about this state of things, as, for instance, the increase of buildings in the suburbs, notably Brompton, Fulham, Battersea, and Wandsworth, where at that period splendid market-gardens existed, with unlimited manure within easy reach. I am now referring to the time when George Bagley, of Fulham, called "Gentleman Bagley," used to come and sell his own produce. He brought fine Asparagus, which he

was introduced from Delagoa Bay by Mrs. Monteiro, who sent flowers to Kew, and a plant flowered with Mr. W. H. Tillett of Norwich in October, 1892.

KEW NOTES.

CYPERUS FERTILIS.—This is an elegant basket-plant or the warm-house, several examples of it at Kew being noteworthy. It has lately been introduced from Old Calabar, where it grows abundantly. Judging by its growth at Kew, it is not a plant to introduce into a tropical country, as it might easily become a pest. It has bright green linear-lanceolate leaves, 6 inches long, and $\frac{3}{4}$ -inch wide, with a distinct keel and prominent nerves, which are coloured red at the base. Its white flower-spikes are borne on slender arching, and finally drooping stolons, which become about 2 feet long, and bear a cluster of plantlets at the end. These hang all round the plant in great profusion, ultimately dropping off, and starting on their own account. Like all sedges, this one enjoys a rich soil and plenty of water.

INCARVILLEA GRANDIFLORA.

A plant of this new introduction from China has lately flowered in the Cape-house at Kew. It is not unlike *I. Delavayi* in some characters, differing in its shorter leaves, more rounded leaflets, and short scape, bearing only one or two flowers, which are, however, as large as those of *I. Delavayi*, whilst the calyx-lobes are much narrower, and the corolla-lobes longer; the colour of the flowers is a rich rose-red. It is possible that *I. grandiflora* is only a form of *I. compacta*, also a native of China. For the discovery and introduction of this plant we are indebted to the expedition to Thibet and Western China by Prince Henry of Orleans in 1890. Another species of *Incarvillea*, found at the same time, has been named *I. lutea*, and is described as having yellow flowers as large as those of *I. Delavayi*. W. W.

SCHIZANTHUS.

WHEN plants of *Schizanthus* in variety are well grown, they make a magnificent show in the spring. The varieties which I have grown are *S. Grahami*, *S. Grahami carmineus*, *S. humilis*, *S. pinnatus albus*, *S. retusus*, and *S. retusus albus*, these being the showiest. The seed may be sown any time during the month of September in pans, in fine sandy soil, shaded, and placed in a cool frame. As soon as the plants are large enough they should be pricked off five or six in a 48-size pot; a 32-size pot serving for the next shift, and in this size they may be flowered, although if larger plants are required a shift into 16's may be afforded. A compost consisting of loam in a rough state, leaf-mould, and cow-dung, three parts of the former and one of the latter, should be used for the final potting, and the plants should be placed in the green-house. The stopping of the growths must be left to the grower's judgment, as it will depend on the size he wishes the plants to reach, and the time they are wanted in bloom. To insert three or four neat stakes placed at equal distances round the pots, and then to tie a piece of green twine at intervals round the stakes, is, for supporting the plants, the best way which I know.

Copious supplies of water at the roots are required at the flowering period, and frequent applications of weak manure-water improve the colours and invigorate the plants, and by keeping them shaded during bright sunshine the flowers last for a long period of time. R. N.

VEGETABLES.

DICKSON'S JUNE KING BROCCOLI.

I CONSIDER this a most valuable acquisition to our supply of late Broccolis, and this year, owing to the earliness of the season in Sussex, we have finished Late Queen and Veitch's Model Broccolis, but June King is just coming into use. The plant is dwarf, and the curd is compact and white. It is a variety that is sure to be extensively grown when better known. E. Burbury, Arundel Castle Gardens, May 30.

THE WEEK'S WORK.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERRARD, Eastwell Park, Ashford.

Rosa rugosa alba.—This is an exceedingly pretty shrub for summer flowering, and the habit of the plant is good. When a plant of this species is well established, progress in size is rapid from its habit of throwing up suckers or shoots from the roots. The flowers are of a pure white, and if planted in quantity, especially when in proximity to the type, a very telling effect is afforded. A good soil, moderately manured, is that which suits *Rosa rugosa*; if the soil be made too rich with plant food the growths become too vigorous, and on the other hand a poor soil brings about a scraggy and stunted appearance. The fruits of the type and the variety are very ornamental.

General Remarks.—The rains have been beneficial to all the various kinds of plants in the flower garden. The borders of herbaceous perennials are gay with Delphiniums, Gaillardias, Lilies, Sweet Williams, Foxgloves, Pæonies, Pentstemons, Potentillas, Pyrethrums, Irises, and many other species of plants. Annuals in beds and borders will be fast coming into flower, as will the border Carnations. The subtropical garden, if not quite so dazzling to the eye, will soon be a source of interest to all who admire fine form in leaf and plant. And even the prim ribbon borders, where they still maintain their place, and the geometrically designed beds, with their Pelargoniums, Calceolarias, Begonias, Lobelias, and other plants, will be a source of enjoyment to others. Roses are in this part of England on the eve of opening. The presence of all this floral beauty gives the true gardener much to do and to think about. He can have no idle moment; what with staking, tying, thinning, pruning, removing spent flowers, &c., his hands are always full.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to C. H. BERNERS, Esq., Woolverstone Park, Ipswich.

Salvias.—Late-struck plants of the autumn and winter-flowering varieties, if they are still in 4 and 5-inch pots, should now be put into pots in which they will remain till they flower, and for this purpose 7 or 8-inch pots are suitable, as when the roots are much restricted, growth is weak. As a compost, make use of good fibry loam, with a small portion of rotten manure, and sand in quantity sufficient to make it porous. When the roots have filled the pots, manure-water may be applied. If a plant is thin, let the points of the shoots be pinched, to induce a greater degree of bushiness.

Bouvardias.—These plants, if set out in a bed of light mould over a spent hot-bed without glass over them, make good late-flowering specimens; and they should be syringed daily when the weather is warm and dry. Any extra vigorous shoots should be stopped, and if the heads are crowded with shoots, some amount of thinning-out will be required. Bouvardias standing in their flowering-pots should be plunged outside in a warm sunny position, having been previously gradually hardened off. Late-struck plants should be pushed on rapidly, and when finally potted, they should occupy 5 or 6-inch pots. Let these last also be hardened-off, and placed outside about the middle of the month.

Achimenes.—These plants now growing freely will, if growing in flower-pots, require to be staked, or they will not have a good appearance. The stakes should be of a length suitable to the variety, neat in form, and painted green. If a particular variety needs to be increased, cuttings formed of the tips of the shoots may be inserted round the sides of a 5 inch pot, in a light sandy soil, and kept close and warm. Plants that have filled their pots with roots may be occasionally afforded weak manure-water.

Myrsiphyllum asparagoides (Smilax).—The last shift may now be afforded plants intended to be grown in flower-pots, and a 32 will be sufficiently large for plants raised this year from seed. Place them so that the growths may be trained on pieces of twine, or, failing this, neat stakes may be employed to support the bine, a very necessary practice if the growths are used in house or dinner-table decorations.

Decorative Trailing Plants.—Batches of cuttings of *Oplismenus Burmanni variegatus*, *Tradescantia*, and *Selaginella* should be struck at this date, to take the place of those that may have become shabby-looking, most of which may be thrown to the rubbish-heap. The cuttings should be inserted thickly, and placed

in a close, moist pit, shading them carefully for a time during bright weather.

Stove Plants for Conservatory or House Decoration should be carefully hardened off some days prior to their removal to the conservatory or house, as to remove stove-plants of any kind before gradually inuring them to a cooler temperature is always a cause of serious injury to them.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Currants and Gooseberries.—Bushes which are making growth freely, will be getting so crowded with shoots that it will become imperative to thin out the latter in order to let in light and air to the fruit. But whilst attending to this matter do not shorten the leading growths, nor those required for extending the crown or filling the gaps caused by loss of branches. Bear in mind to leave sufficient foliage to aid the fullest development of the fruits. As a rule of general application, it may be stated that the weaker shoots may be cut back to the base, and the stronger ones to three leaves of full size. Black Currants should receive no summer pruning in this way, the fruit being borne chiefly on wood of the preceding year.

Raspberries.—The whole of the young canes not should required to grow into fruit-bearers for next year be removed. Too often the Raspberry plantation is allowed to become a mass of root-suckers, starving the main stools and impoverishing the soil, forming a harbour for the fruit-eating and other birds, and hindering the due ripening of the fruits. It is a mistake to do nothing till the fruit is gathered, as is so often the rule in gardens. If young canes for forming plantations next year or this year are required, a sufficient number must be left, and at such distances from the old stools, that their removal in the autumn or spring may be effected without injury to the latter.

Out-door Vines.—These plants need frequent attention in the matter of securing the leaders to the wall, the removal of every weak or useless shoot, and the stopping of others at two joints beyond a bunch. If new rods are going to be laid-in in place of old ones, these should now be selected and trained at full length on a sunny, bare part of the wall. The side-growths coming from these young canes may be stopped at the first joint. Mildew in out-door Vines is often brought about by the dryness and impoverishment of the soil of the border, and it is a prudent course to afford water and diluted liquid-manure during the summer; and a dressing of Vine-manure is beneficial if afforded after the fruit is set. This applies more particularly to Vines in confined borders. Vines with unrestricted root-runs can scarcely be helped in this manner, their roots being as a rule far from home.

Plums.—If the trees of Denyer's Victoria and Rivers' Prolific planted against walls are too abundantly cropped, some rather severe thinning should be done, otherwise the fruit will be small in size, and lacking in flavour. Moreover, timely thinning favours the production of a fruit-crop the following season. The green fruits that are pulled off are of use in the kitchen, and need not be thrown away.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorset.

Aërides japonica and Promenæa citrina are now flowering in the cool-house; these are two rarely-seen species of Orchids worth adding to any collection. The flower-spikes of the *Aërides* droop gracefully, and the blossoms possess a delicate fragrance. The plant should be grown in a small pan or basket, and have only crocks and sphagnum-moss in which to root. The *Promenæa* being of dwarf growth should also be cultivated similarly. During the summer let both plants be hung in a shady part of the cool-house, in winter removing them to a cool position in the intermediate-house, and keeping them always moist at the root.

Odontoglossum House.—At this season a few of the plants in this house will require repotting or re-surfacing, the more important of these being *Maxillaria Sanderiana*, *M. Hübschi*, *M. Amesiana*, *M. prestans*, *M. Augusta Victoria*, and *M. striata grandiflora*. These varieties are the better for being cultivated in baskets, for the reason that the flower-spikes frequently push forth in a downward direction, similar to *Stanhopea* and *Acineta*. *M. grandiflora*, *M. fucata*, *M. Harrisoniae*, *M. Houtteana*, *M. lepidota*, *M. luteo-alba*,

M. nigrescens, *M. picta*, *M. tenuifolia*, *M. venusta*, *M. meleagris*, *M. scurrilis*, *M. Lindenii*, *M. fractiflexa*, *M. mirabilis*, *M. porrecta*, and *M. elegantula*, may be cultivated successfully in an ordinary flower-pot. *Maxillarias* make plenty of roots and grow freely in a compost that consists of $\frac{2}{3}$ sphagnum-moss, $\frac{1}{3}$ peat, and a moderate quantity of clean crocks. Let the pot be filled up to two thirds of its depth with drainage material, and on this place the plant. After repotting apply water cautiously till roots push forth freely, when more may be afforded till the new growths are mature. All of the *Maxillarias* enumerated succeed when placed at the warmest part of the cool-house and afforded plenty of light, but not direct sunlight at any time.

Oncidiums.—The species *O. tigrinum*, *O. dichromum*, *O. excavatum* (aureum), *O. obryzatum*, *O. ornithorhynchum*, and *O. sessile*, may likewise require fresh material in some instances. Plants of *O. superbiens* and *O. loxense* now in flower should be kept moist at the root till the flower-spikes are cut, and then the quantity of water should be reduced, which will have the effect of inducing the plants to rest, which they may be allowed to do for a short time. They will break all the stronger for such rest.

Calanthe Veitchii, *C. bella*, *C. Burfordiense*, *C. Victoria Regina*, and the *vestita* section generally, now growing vigorously and getting well-rooted, should be afforded plenty of light, heat, and moisture, and occasionally weak cow-stall drainings. It is at this season that the plants should be examined occasionally, and where numbers of roots show on the surface of the compost, a thin layer of lumpy, fibrous-loam should be placed lightly over them, into which the roots quickly find their way, to the advantage of the plant. Keep the plants conveniently near the roof, and afford a humid atmosphere at all times, but avoid letting water lodge in the centres of the growths or axils of the leaves.

Eulophia guineensis (congoensis) and the pretty *Geodorum Augusti* require the same kind of treatment as the *Calanthes*.

Catasetum and *Cynoches*, now growing rapidly, should be afforded strong heat and a clear light at this season, and the best position for the plants will be found on the south-side of the East Indian-house, suspended close to the roof, with their foliage almost touching it. Afford water plentifully at the root till the new pseudo-bulbs are fully matured, and the leaves fallen. The flower-spikes generally appear just before the pseudo-bulbs are fully developed.

Habenaria rhodochila.—Plants that have ceased to flower may be placed in a light position near the roof in order to ripen the tubers. *Habenaria militaris*, *H. Susannae*, *H. carnea*, and its variety *nivosa*, if now growing freely will require much root moisture till the flowers show, and afterwards a less quantity will suffice. Watch the plants carefully for insects, or the beautiful foliage will soon become disfigured.

Miscellaneous.—Plants of *Platyclinis glumacea* may be removed from the East Indian-house to a cool intermediate-house, and growth being now finished less water is needed at the root. The leaves of the plants should be frequently syringed in order to keep them free from insects. *P. uncata* and *P. Cobbiana* will require the same kind of treatment till growth recommences. *P. filiformis* is fast sending up its thread-like flower-stems, and the plant will benefit from a daily over-head syringing till such time as the flowers open. This pretty species thrives best in the intermediate-house the whole year round. All of the *Thunias* should, as they go out of bloom, be placed in a less warm temperature by a few degrees than that of the East Indian-house, and where they may be gradually inured to the full light. They will require to be afforded water till the leaves begin to change to a yellow hue, from which time water should be withheld by degrees, and after the leaves have fallen not any water should be afforded. When at rest, place in a dry position, where the temperature does not fall below 55°.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

The Late-Bearing Peas.—The sowings of these varieties require a cool, deep soil, and an open sunny position. The round-seeded, early Peas not being so liable to attacks of mildew as the Marrowfats should be the ones sown. Let narrow trenches be prepared as for a row of Celery, or sow in well-trenched ground not recently manured with nitrogenous farmyard-dung. An endeavour should be made to keep the plants vigorous and green by frequent applications of

water in the dry weather, and dressings of artificial manure rich in potash.

Cauliflowers.—Those plants that were raised from seeds in May, and pricked out in nurse beds, will now be fit to plant out. They will form the latest supply of heads, and should be planted on a sunny open piece of ground in rows 18 inches apart, 12 inches between the plants, as they will not attain to the size of the earlier sowings. Plant with a trowel and make the soil firm about the ball, affording water in dry weather, keeping the soil stirred, and moulding up the stems when the plants are about 1 foot high, and generally following the directions given in earlier calendars.

Celery.—In some parts of the country it will have been necessary to afford water to the Celery-plants in the trenches, and as doing this causes the surface to cake, the hand-fork or hoe should be used to break it up slightly. And before proceeding to set out Celery, it is good practice to loosen the soil in the trenches in the same manner. The main Celery crop should now be planted in trenches at 9 inches apart; or if double rows are planted in a trench, they should stand at 12 inches by 9 inches. Assuming the plants were pricked out on nurse-beds, they should be lifted and planted with a trowel, so as not to damage the roots more than can be helped. And as regards the time to plant, a dull day following rain is the most suitable. Some gardeners sow thinly, and do not transplant, but lift the plants with a fork, trim the roots, and top the plants somewhat.

Brussels Sprouts, Savoy, and Borecole.—Advantage should be taken of showery weather to make good any vacancies in the beds and plantations, and to plant out the required numbers of the above.

Vegetable-Marrow and Cucumbers.—The early plants are now in bearing, and the bine will require regulating and thinning at short intervals of time, placing it regularly and evenly over the beds, pegging it down so as to keep it in place, and cause rooting at the points where it touches the soil, which will all add to the strength and vigour of the plants. The same rule holds good for plants of the pickling Cucumber. Afford each a frequent dewing over on hot afternoons with a syringe or a watering-pot.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

The Strawberry.—Continuing my remarks of last week on this subject, I would advise the gardener to determine the varieties he will force next season, and the number of each. Some varieties do better in some gardens than others when forced early, that is, for putting into the forcing-house in November and December. At Hatfield, that good Strawberry for early forcing, *Vicomtesse H. du Thury*, and also *La Grosse Sucrée*, are the best, and even for keeping up the supply till fruits are ripe out-of-doors. Other trustworthy varieties are *Royal Sovereign*, *Sir Charles Napier*, *President*, and *British Queen*. If one variety only is required, choose *Royal Sovereign*. The Strawberry is subject to infestation by mildew, which, should it appear on the old plants, from which runners are being taken for potting, it will spread to the young plants, checking growth very much. As a remedy, dissolve flowers-of-sulphur in water till it forms a thin paste, and then mix it with water at the rate of half-a-pint to two gallons of water. With this mixture let the plants be syringed from both sides of the row, doing this in fine weather. More than one application may be needed before the rooted runners are severed from the mother plants.

Melons.—The plants raised from seeds sown about a month ago should now be planted; and if a Melon-house is at command, and such a structure is always best for bringing a late crop of Melons to perfection, it should be thoroughly cleaned, and everything cleared out of it that is likely to breed fungus or afford a harbour for insects. Melon plants do not need more than 8 inches of soil, and this may be put on a hard floor overlying the water-pipes. For earlier fruiting plants, if the construction of the house will admit of it, a quantity of prepared stable-litter and tree-leaves is an advantage as a means of affording bottom-heat, is a saving of labour, and produces better flavoured fruit; moreover, a more shallow bed of soil is required. The best kind of soil for Melons is a stiff pasture loam one year in stack, which should be trodden or rammed firm when put on the bed. Let it get well warmed before the plants are put out. In pits where the Melon-plants are in flower, let the air be maintained of an uniform

degree of warmth of 68° to 70° by night, and 80° to 85° by day, with a bottom-heat of 80°. By keeping a high day temperature, the plants can be afforded freer ventilation at the setting time. At this particular period the plants should not be syringed overhead, but the moisture necessary to healthy growth in the plants can be afforded by damping the walls and bare parts of the Melon-bed. Plants in other stages of growth, whilst cool weather lasts, should be less frequently syringed. Melons grown in frames should be carefully looked after as regards the stopping of the shoots and fertilisation of the blossoms.

Cucumbers.—Let the spent bine and the older leaves be removed in small quantities from time to time, laying in new bine and pinching the points of laterals. If many roots appear at the surface, afford a 2 inch layer of soil and horse-manure. If winter Cucumbers are grown, a sowing of seed should now be made, in order to have plants for putting out in another structure, while the winter plants are coming into bearing. Cucumbers in frames require much the same kind of treatment as those in houses. The frames should be shut up early in the afternoon.

Tomatos.—When the stem reaches its limit, nip out the point and all the side-shoots, and keep them nipped off. Plants bearing a full crop of fruit may be afforded a dressing of loamy soil, mixed with old plaster, &c., enriched with an artificial manure. Plants for winter-cropping should be potted-off, and afterwards shaded from bright sunshine for a week or ten days.

THE APIARY.

By EXPERT.

Affording Honey Storing-space.—The first indication of bees needing room for honey-storing is when the top portions of the combs in the body-box become extended, as may be seen by the lighter colour of the wax employed by the bees in lengthening out the cells. This is an unfailing sign that honey is coming in, and that increased space must be afforded without delay. The ability to produce honey in quantity and in good form bespeaks the skilful bee-man, and such a one takes time by the forelock—has his supers ready to put on at a moment's notice, and no matter how long the inflow lasts, he is prepared for it. In fact, the loss of a couple of days may mean the loss of cwt. of honey, even in a moderate-sized apiary. In the year 1893 the inflow set in during the last week of May, at the rate of 6 lb. per hive per day. It, therefore, does not take much adding up to see what the loss to a bee-keeper owning a couple of score of colonies means at such a time. Supers were filled and ready for removal in three days, and unless others had been ready to take their places, see what the loss would have been. This happy condition may be our lot in 1898, and we should at any rate keep wide awake as to possibilities. We may be disappointed, but, bearing in mind that supers are not perishable, the worst that can happen is having to put them carefully away for another year. Remember the adage, "Store is no sore," and it is better to have stores and not need them than to need and be unable to get them. Having then decided what kind of surplus we intend to work for, let us prepare supers accordingly. If for extracted honey, fit the shallow frames with thin brood foundation. If for sections get the same fitted with full sheets of thin super foundation. To get bees to work well and quickly in surplus chambers—whether of shallow frames or sections—the main point is to prevent them from storing to any great extent in the brood-chamber. This latter should be reserved for the use of the queen, the main harvest being as nearly as possible all carried into the upper chambers. Any second crop may with advantage be left to go into the brood-chamber for winter stores. The natural position for stores intended for bee-food is above the brood, and with a little management the lower chamber can be filled with brood all through this month, after which time all stores must necessarily go into the chambers above. Under no circumstances should we allow the surplus to go below to the exclusion of brood, if we do that, there is little hope of remedying the defect before the honey flow is over. The immediate object to work for now is a strong stock of bees, and the whole body-box filled with brood; this object secured, the principal harvest will be stored in our supers. Wrap all supers up warmly, and see that they fit close down upon the brood-chamber. When the first super is three-parts filled, add another below, this leaves an empty space, and bees abhor a vacuum when honey is plentiful, and will at once set to work to fill it. A space between brood and stores tends to prevent swarming, and offers the bees an inducement to work harder than before.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR JULY.

SATURDAY, JULY 2	{ National Rose Exhibition at the Crystal Palace.
TUESDAY, JULY 5	{ Rose and Horticultural Shows at Hereford, Diss, and Harrow.
WEDNESDAY, JULY 6	{ County Borough of Hanley (Staffs) Horticultural Fête (2 days). Rose and Horticultural Shows at Farningham, Newton Stewart, Tunbridge Wells, Enfield, Redhill (Reigate), Chelmsford, Ealing, and Hitchin.
THURSDAY, JULY 7	—Rose Show at Woodbridge, Suffolk.
FRIDAY, JULY 8	—Ulverston Rose Show.
SATURDAY, JULY 9	{ Manchester Royal Botanic Society Rose Show. Wood Green and District Horticultural Society, Show. Royal Botanic Society, General Meeting. National Amateur Gardening Association, at Regent's Park.
TUESDAY, JULY 12	{ Royal Horticultural Society's Committee. Wolverhampton Horticultural Show (3 days).
WEDNESDAY, JULY 13	{ Durham, Northumberland, and Newcastle-on-Tyne Horticultural Show, at Newcastle (Deputation from the Royal Horticultural Society). Rose and Horticultural Shows at Nottingham (2 days), Bedford, Maidstone, and Ipswich.
THURSDAY, JULY 14	{ National Rose Society's Show at Halifax. Jersey Gardeners' Floral Fête. Floral Fête (Hospital) at Canterbury. Rose and Horticultural Shows at Salterhebble, Reading, and Brentwood.
SATURDAY, JULY 16	{ New Brighton Rose and Horticultural Show. Cardiff Horticultural Society's Show (2 days).
WEDNESDAY, JULY 20	{ National Carnation and Picotee Society's Show at the Crystal Palace.
THURSDAY, JULY 21	—Sidecup Rose Show.
SATURDAY, JULY 23	{ Royal Botanic Society, General Meeting. Redhill Carnation and Picotee Society's Show.
TUESDAY, JULY 26	{ Royal Horticultural Society's Committee. Tisbury Rose and Horticultural Show.
WEDNESDAY, JULY 27	{ Beckenham Horticultural Society, Show. Brightstone (Isle of Wight) Horticultural Show.
THURSDAY, JULY 28	—Bedale Rose and Horticultural Show.

SALES FOR THE ENSUING WEEK.

THURSDAY, JULY 2	{ Frechold Building Land at Malden, Essex, by Protheroe & Morris.
FRIDAY, JULY 8	{ Orchids and Palm-seeds, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—63°1.

ACTUAL TEMPERATURES:—

LONDON.—June 29 (6 P.M.): Max., 74°; Min., 59°.
PROVINCES.—June 29 (6 P.M.): Max., 68°; Shields; Min., 56°; Sumburgh Head.
Dull; showery.

The Royal Horticultural Society's Fruit Show.

WHEN referring, on p. 360 of our last volume, to the recently-issued schedule of the September fruit show, we omitted to note an important regulation that appears upon one end of the entry forms, to the effect that the practice of advertising with what manure the fruit has been grown is prohibited. The Royal Horticultural Society has in many instances of late introduced very necessary improvements in connection with horticultural exhibitions, and though the present modification may be considered a small matter, it is by no means unimportant. Horticultural shows should be made pretty and attractive as possible, and as much by the elimination of unnecessary features that tend to mar the beauty of the display as by the introduction of novel and gratifying effects.

Those of us who are in the habit of visiting the exhibitions for the purpose of inspecting the plants and flowers to be found there, are only too sensible of the untasteful prominence given to advertisement cards. But of these the greatest objection is taken to the cards placed in very close proximity to first-prize collections, and suggesting, and sometimes actually asserting, that the produce has been grown by the aid of this or that manure. We need not discuss whether these are placed in such positions by the exhibitors themselves, or by their permission even. It is a fact that they are generally distributed subsequent to the prizes being awarded, and the visitor will seldom see one attached to other than a first-prize exhibit.

Without asserting that in many cases the exhibits may never have been given any of the particular manure so closely associated with them during their exhibition period, this much is quite certain, that the manure has played a secondary part in the production of the flowers, fruits, or vegetables. Is not the first prize in a competition a primary testimony to the skill of the cultivator? His attention to details, his knowledge of the plant's requirements, and his doing of necessary work at the proper time, all these are the chief factors in the successful cultivation of any plant, and were such a cultivator to substitute Mr. So-and-So's artificial manure for Mr. Somebody-else's preparation, the result would most likely be similar. Gardeners understand this, but the "man in the street," the large number of unprofessional cultivators who attend the shows, may be misled.

It is, therefore, most gratifying to note that the Royal Horticultural Society has decided that such practices in future will not be permitted at their fruit show. Certain other societies who are ever ambitious of acquiring a respectable reputation, would find it to their advantage to adopt a similar course in the matter.

We may add, also, that we have no sympathy with the custom of displaying cards advertising the fact that certain exhibits have resulted from the employment of seeds from a particular establishment. As in the other case, the credit is usually wholly due to the cultivator, who would not be likely to make use of inferior seeds.

ESCALLONIA LANGLEYENSIS × (fig. 4, p. 11).—This is a hybrid raised by Mr. SEDEN, at Messrs. VEITCH'S Nursery at Langley, between *E. macrantha*, which has relatively large pink flowers, and *E. Philippiana* (*Gardeners' Chronicle*, July 12, 1873, p. 947, *descript.*; and July 27, 1873, fig. 13), which has a profusion of small white flowers. The leaves of the hybrid are subsessile, linear,

oblong, tapering to both ends, and finely glandular serrate; the flowers are like those of *E. Philippiana*, but in colour a rosy-pink.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. C. J. INGRAM, secretary, desires us to inform our readers that the amount collected by Mr. J. JAKES for the Gardeners' Royal Benevolent Institution was £14 6s., not £7 10s., as stated.

MRS. WOODMAN.—We are glad to hear from Mr. NAPPER, whose devotion to his former employer is most touching, that Mrs. WOODMAN has been elected a pensioner of the Royal Masonic Benevolent Institution. It is pleasing to learn that the notices in the horticultural journals were important factors in producing this result.

GARDENERS' INVESTMENTS.—It was stated by the Treasurer at the recent dinner of the Gardeners' Royal Benevolent Institution that in one instance to which he referred, a gardener had subscribed sixteen years before he became a pensioner in 1866. He died in 1875, when the widow succeeded to the pension. Thus the husband received £144 from the Institution, and the widow £314, making a total of £458 received for an expenditure of £15 15s.!

GARDENERS' WAGES.—That these are often of the lowest amount, and utterly inadequate, we all know, but such low wages are not universal, or even general among the ten or twelve thousand men whose names occur in the garden year-books; and do not account for the painful want of proportion between those in receipt of adequate salaries and those who are contributors to the gardening charities.

GARDENERS' CHARITIES.—It is humiliating to have to beg in face of the figures which have been recently published to the effect that there are only 300 practical gardeners who contribute the annual mite required by the Orphan Fund, and of these only thirteen come from Scotland, in spite of the fact that eight of the children come from that country! How many *bona fide* gardeners in good places subscribe to the Gardeners' Benevolent?

FLOWER ON TENDRIL OF PASSION-FLOWER.—"Oakfield" obliges us with an interesting specimen of a flower produced on the tendril of a Passion-flower. Botanists have always been of opinion that the tendrils were modified flower-stalks, and the specimen sent by "Oakfield" confirms this in the most interesting manner.

A ROYAL VISIT TO MOORTEBEEK.—On Thursday, June 23, the King of the BELGIANS paid a visit to this well-known Orchid establishment, situated in the neighbourhood of Brussels. Under the guidance of Mr. LUCIEN LINDEN, the KING inspected for several hours the various houses and their treasures, and repeatedly expressed the deep interest he takes in horticulture, which plays such an important part in the industry of the country. His Majesty also complimented Mr. LUCIEN LINDEN on the model establishment he has erected, and continues to maintain in such a highly efficient manner.

LYONS.—The programme of the International Horticultural Exhibition to be held at Lyons from September 1 to 4, may be had on application to M. ANTOINE RIVOIRE, the President of the Committee, 16, Rue d'Algérie, Lyons. It is expected that Lyons will be the meeting place of all those distinguished in horticulture.

CAMPANULATE FOXGLOVES.—Several correspondents have favoured us with specimens this week. For some reason or other, the axis becomes arrested in its growth, and several of the topmost flowers run together and form a cup. The inner parts of the flower are generally more or less deformed, and no two are exactly alike.

NO. 3001.—This week we commence another millenary, so far as the weekly issue is concerned. Last week's number was the three thousandth weekly issue, and concluded the twenty-third volume of the third series. We are happy to state that the circulation is more than double what it was when we were younger!

CONFERENCE AT FLORENCE ON EARLY AND DELAYED MATURITY IN PLANTS.—We have received from the President of the Georgofili, or Royal Academy of Economy and Agriculture, particulars of

cultivated at lower latitude and at a lower altitude than those of the localities whence they were taken. Herbaceous plants, such as Wheat and other autumn-winter cereals ripen, on the contrary, later if the seed

under the same conditions of time and situation. On the contrary, different varieties from our country, Rieti Wheat, and red and white winter Wheat, are, in comparison, several days in advance of local varieties when cultivated in regions situated at an altitude higher than that of their original habitat; also, these varieties are renowned and sought after either in the north of Italy or in France, thanks to their early maturity, which renders them less subject to diseases, and especially to the attacks of rust. This difference in the vegetation of woody and herbaceous plants offers a problem not yet satisfactorily solved, based on the study of vegetable physiology and field meteorology; therefore, the Academy has offered a prize for a paper detailing the results of studies and experiments explanatory of the precocious or belated development of certain organs of field-crops when these are cultivated in localities where latitude and altitude differ from those of their original habitat." The competition is to be international; a Diploma with a Silver Medal, and a prize of 1200f. = £48, are offered to the author of the best monograph on the subject proposed. •Papers are to be written in Italian or French, and must be sent in to the Academy by June 30, 1900, and the award will be announced at the chief public meeting of the Academic year, 1900. The Secretary of the Academy is Signor A. FRANCHETTI, Florence.

LITERATURE OF FUNGOUS DISEASES.—Mr. W. C. STURGIS contributes to the Twenty-first Annual Report of the Connecticut Agricultural Station (New Haven, Conn.), a valuable list of the publications relating to plant diseases, issued by the U. S. Department of Agriculture and the several experiment stations during the ten years, 1887-1897, inclusive. The list will be so valuable that we may express the hope that it will be circulated separately. The author has adopted popular names where they are not misleading, and has endeavoured to systematise them thus, black-knot, black-rot, rust, leaf-blight, leaf-spot, stem-rot, mildew, leaf-scab.

ROSARIAN SOCIETY'S EXHIBITION AT LYONS.—We have received intimation concerning the second Conference of the French Society of Rosarians, which will be held at Lyons on September 2 and 3, on the occasion of the Concours Régional and the Horticultural Exhibition. The following subjects are proposed by the Society for discussion:—1st. The Classification of Roses; 2nd. Different Stocks and their Value; 3rd. Diseases of Roses, and Remedies to be applied; 4th. Synonymy in Roses; 5th. Forcing Roses, and the best Varieties for Forcing; 6th. The best Varieties of Roses for Cut Flowers; 7th. The Pruning of Roses; 8th. Use of different Manures in Rose-culture. Those who desire to deal with one or more of these questions, should send in their papers to the Secretary (M. OCTAVE MEYRAN) before August 15. The Exhibition at Lyons promises to be the most successful hitherto held, and promise of support is already assured from many horticultural and amateur growers.

A FERN-FROND SCREEN.—We have received from Mr. H. T. MARTIN, particulars of a four-fold screen 4 feet high, the leaves of which are ornamented on both sides with dried Fern-fronds. This style of decoration requires considerable time and patience to execute neatly, and our correspondent has evidently taken great pains with his work. The special interest attaching to this screen lies in the fact that the eighty pieces of different exotic Ferns and Mosses stuck upon it were grown or collected by Mr. MARTIN himself, and thus the charm of association is for him added to that of mere beauty of form and arrangement.

VIOLETS.—Mr. A. L. WINTON gives the following details relating to Violets:—One thousand plants contained in pounds, 257 lb. of water, 52 of organic and volatile matters, 7 of other mineral matter = 316. Of nitrogen, the quantity works out at 1.5; potash, 1.74; soda, .55; lime, .62; magnesia, .25; phosphoric acid, .37; sulphuric acid, .32; chlorine .27; other matters, 2.76 = 6.88.



FIG. 4.—ESCALLONIA LANGLEYENSIS: FLOWERS PINK. HORT. VEITCH. (SEE P. 10.)

a Congress to be held next year at Florence to consider the subject of advanced or delayed maturity in certain plants under varying conditions. Thus, some fruits, the Vine among others, ripen earlier when

comes from a locality higher both as to latitude and altitude. It sometimes occurs that certain varieties of foreign W heats from France, England and Germany ripen later than local Italian varieties, when cultivated

HOME CORRESPONDENCE.

THE GARDENING CHARITIES.—In your issue for June 18, your correspondent, Thomas Fletcher, commences his letter with a reference, as I suppose, to the Gardeners' Orphan Fund. He then proceeds to arraign the various insurance companies, calling into question their expenditure and general utility, and finally concludes by referring, as I imagine, to the Gardeners' Royal Benevolent Institution. It is in connection with this last-named charity that I venture to trespass on your space with a few brief remarks. When speaking at the festival dinner in aid of the funds of this institution on the 8th inst., I mentioned that it seemed to me that criticism in the horticultural press had worn itself out, but it seems I was mistaken; it has very little ground to stand upon if it endeavours to still sustain the fallacy that the gardeners who subscribe have no advantages over those who do not do so, the last remnant of which had been swept away, mainly owing to the splendid idea of Mr. Harry J. Veitch, the originator of the "Victorian Era Fund," established last year to commemorate Her Majesty's Diamond Jubilee, and which is devoted exclusively to the benefit of unsuccessful candidates, who have been subscribers, or the widows of subscribers. As soon, therefore, as a candidate, who has been a subscriber, or the widow of a subscriber, has satisfied the committee that he or she is a necessitous, deserving, and eligible person for a pension, such candidate is certain to be either elected a pensioner, or to receive benefit from this fund in proportion to the number of years of subscription. This is at once conclusive evidence of the advantages to subscribing gardeners should they unfortunately need assistance in their old age and time of need. Mr. Thomas Fletcher says that the "principle" on which the gardening charities are carried out is utterly wrong, but I fear he knows nothing of the "principle" of the Gardeners' Royal Benevolent Institution, at any rate, or of the Gardeners' Orphan Fund for the matter of that. Perhaps he will be surprised to learn that the former institution pays out to gardeners in pensions aggregately nearly five times as much as it receives from gardeners, although I am delighted to know that the gardeners who are making themselves acquainted with the institution and its work, are numbering themselves amongst its subscribers, and are doing all they can to further its progress and enlarge its usefulness. Besides which, out of thirty-six members of its Committee of Management, twelve are practical gardeners who may be supposed to have some knowledge at least of the "principle" which governs its operations, and I rejoice to know that these with many of their fellows, are doing their level best to support an Institution which is helping 168 poor old people to end their days in comparative comfort and without anxiety, as well as others not yet elected. I cannot think, therefore, that your correspondent voices the opinions of the majority of the gardeners, who in regard to the Institution could have no ground of complaint as to the benefits to be derived from its funds in cases of necessity and misfortune; and it must be borne in mind that four-fifths of its income are derived from the generous members of the nursery, seed, and allied trades as well as the benevolent public who take an interest in gardening, and who contribute, not for their own benefit, but for that of the gardener and his widow in their declining years. No public man of unimpeachable honesty and integrity ever fears criticism, neither does a well-managed institution, but in justice to a charity like the Gardeners' Royal Benevolent Institution which has existed sixty years, your critic should first thoroughly acquaint himself with the "principle" on which it is carried out before he makes the assertion that it is "utterly wrong." *George Monro, Covent Garden Market.*

A WASH AND BRUSH-UP AT SHOWS.—Now that the various horticultural societies are making their show arrangements, and in connection with your correspondent's suggestion for the earlier closing on the last day, I should like to suggest another boon for exhibitors. Would it not be possible for the larger societies to provide a small tent where a wash and brush-up could be obtained at a small charge? We are often so pressed for time after staging, as to be unable to get to our hotel and back before the show opens; and I feel sure that such accommodation would be greatly appreciated by exhibitors generally, including *Ernest J. Davis*. [May we suggest that a supply of clean towels is a great want at the Drill Hall, Ed.]

PRIMULA TRILH.—It is gratifying to find Mr. G. F. Wilson acknowledging that this supposed new species is simply *P. involucrata* under a new name. The result fully justifies the position taken by a small minority of the Floral Committee who objected to the creation of a new species upon such exceedingly vague information, and who also contended that Mr. Wilson's *Primula* was simply *P. involucrata*. What the Floral Committee, who are responsible for the new name, will be disposed to do in the matter, I cannot say, but I should think their obvious course is to withdraw both the name and the award. It may be a reproduction of Captain Munro's form of *P. involucrata*, which in all probability has become lost, for notwithstanding I have obtained this *Primula* under the names of *involucrata* and *Munroi*, I have always been unable to detect any difference between them. *R. Dean.*

LEAFAGE OF THE ASH-TREE IN THE NORTH.—The Ash and the Walnut mostly bring up the rear among our deciduous trees. I noticed, however, yesterday (June 20), several Ash-trees in fair and full leafage in and around Edinburgh. Considering the handsome appearance of the Ash in all its stages, flowering, foliage, and keys or seeds, it is surprising it is so little planted, either for use or ornament. In parks or pleasure-grounds we often find twenty, thirty, fifty Elms for one Ash. Even the lateness of its leafage should be a merit in many positions. For while Limes and Sycamores are approaching the sere and yellow leaf, the Ash clothes itself with its long robes of drooping green, very distinct and beautiful, whether at rest or in motion. *D. T. F.*

MANCHESTER AND NORTH OF ENGLAND ORCHID SOCIETY AND ITS AWARDS.—For an ordinary individual to attempt to criticise such an august assembly may appear somewhat presumptuous, but as a close observer of all reports relative to their meetings, and a conscientious well-wisher for the success of such a society, it is to be hoped that my remarks may be received in the spirit in which they are written. In the *Gardeners' Chronicle* of June 25, reporting the last meeting of the above Society, I note a First-class Certificate was awarded to a *Zygopetalum* "species." Had this particular plant been given a varietal name, no exception theoretically could have been raised; but I venture to ask, what is to prevent this very same plant being again exhibited by its present or ultimate owner, as *Zygopetalum* so-and-so, and awarded again a First-class Certificate, or the lesser Award? The committee could not technically say that *Zygopetalum* so-and-so had been previously recognised. The height of ambition in an Orchid connoisseur is to receive a First-class Certificate for any of his pets; and I respectfully contend that no plant should receive this much-coveted Award from any deliberating body, excepting it is properly designated and recorded, so that there is no possible chance of throwing away the distinction F.C.C. *Cattleya Mossii Rappartiana* was also favoured with F.C.C. How many more times? This is the second, if not the third, time the Society has so honoured it. Does not the sole value of such an honour lie in its uniqueness? and which in "ye old times" was considered by the possessor to be valuable, and with pride he looked forward to the increasing value of his plant. Alas! how things are changing, when on each consecutive season resemblances to a variety crop up, and they are in turn given honours equal in value to the typical and original. The Society presumably is wealthy, and why should it not, therefore, appoint a salaried secretary, one who is conversant with Orchids, experienced as a cultivator of them, who should assist the committee in making their awards by having matters pertinent to the exhibit in readiness for the meeting? Whatever is done, it is not advisable purposely to increase the difficulties of Orchid nomenclature by making indiscriminate awards. *I. I.*

THE STRAWBERRY-CROP.—How late good ripe Strawberries are in coming into the market! Practically there are, or will be, few up to the end of June. Commonly we have had them abundant by the middle of the month. I hear from the Swanley district that the fruits swell very slowly. I observed in one huge breadth just opposite Mr. Cannell's residence, that so late as June 21, strawing was then proceeding, the variety being Sir J. Paxton. Curiously enough, too, the oat-straw used was imported. Does that indicate that the war has sent up the price of straw as well as of corn? The bloom everywhere indicated a very heavy crop. Those gardeners who kept a good stock of plants in pots late, must have found them to be most valuable in helping to fill up that void created by the delay of out-door fruits to ripen. The showers

now falling may help the plants and fruits materially, but they are accompanied by cold winds, and if continued may conduce to mildew rather than to colour. *A. D.*

THE NATIONAL DAHLIA SOCIETY.—Permit me to correct a small error found in one of your answers to correspondents at p. 400 in previous issue, relating to this society. The secretary (honorary) now is Mr. J. F. Hudson, M.A., son of Mr. James Hudson, of Gunnersbury House Gardens, to which address all communications to Mr. J. F. Hudson should be sent. Mr. Girdlestone is now the President. Mr. Hudson, whilst actively engaged in academic work at Oxford, finds particular enjoyment in carrying out the duties of secretary during his periods of vacation, and is also an attached admirer of the Dahlia. The society is very fortunate in its officers and committee, as well as in its place for shows, as all are devoid of those unpleasant amenities which have of late made another society unfortunately notorious. Long may the National Dahlia Society and its beautiful Crystal Palace Show in September continue to enjoy those appropriate and refining associations which are making them so popular in the community. *A. D.*

THE COLD SNAP.—On June 15 at Newton Hall, Rillington, Yorkshire, our thermometer, standing at 3 feet from the ground, registered 7° of frost, and Royal Ashleaf Potatoes were badly injured in some parts of the garden, whilst others had not a leaf blackened. May Duke Cherries were badly injured on the exposed side of the fruit, as were late Strawberry blooms, but happily the bulk of the fruit was set, and is now safe. *James Elworthy.*

VITALITY OF HEVEA-SEEDS.—The several species of Hevea known to yield commercial caoutchouc are natives of Brazil and Guiana. Their seeds are now in great demand, but there appears to be some difficulty in obtaining them fresh. Some of the seeds received here are too old to grow, having, probably, laid under the trees for months before they were collected. If the seeds are collected as they fall from the trees, and packed dry in wooden boxes, they will retain their vitality for several months. They have been sent to Kew from Guiana, Trinidad, and Ceylon in bags or small wooden boxes, and nearly every seed thus sent has germinated. Last year a consignment of seeds reached Kew in a partially germinated condition owing to their having been packed in moist soil. They were accordingly planted thickly in boxes, and when about a foot high, the boxes were fixed inside Wardian-cases, and despatched on long journeys with success. A large importer of these seeds found it a good plan to sow them in boxes, and when the seedlings were a foot high to cut them down to about 6 inches; this treatment made them sturdy and better able to support a long sea-voyage; it also reduced the space they needed, flat-topped, shallow boxes with glass lids sufficing for them. The seeds require a tropical temperature and plenty of moisture to induce them to germinate. Briefly, the directions I would give for the importation of seeds of Hevea are: 1. See that the seeds are collected immediately after they fall from the trees; 2. Pack the seeds dry in wooden-boxes or bags if intended for long transport; 3. Sow the seeds in a high temperature, and give them plenty of water; 4. Seedlings should be sturdy and about a year old if intended for a long journey in a Wardian-case. *W. W.*

THE OAK-CATERPILLAR.—The replies to my letter respecting the Oak-caterpillar, have induced me to venture on one more. First, as to Mr. Forbes' consoling statement that no permanent injury need be feared; with the greatest respect to his opinion, I have positive proof that repeated attacks of the caterpillar do kill the Oak, as this occurred in Hopmas Wood, near Tamworth. I saw the trees. Many of the Oaks here are dead in the tops, and they are comparatively young trees, i.e., about 120 years old. From observation I am pretty sure this is caused by the destruction in successive years of the crop of leaves. But now for another subject, viz., that of bird preservation, the point suggested by "R. M., Newbury." The rooks have this year scarcely left the Oak-trees, and have been observed particularly active in the infested branches. I do not find nearly as many caterpillars on the infested branches of young trees within my reach, and as yet have seen few moths. A gentleman well acquainted with the subject, informed me last week, that after two attacks of caterpillar in the woods at Belvoir, the rooks came down and completely cleared out the insects. Now the rooks have greatly diminished near here. In rook-shooting time, the breech-loader does its work too

well. The inference I draw from what I can learn is, to give the rooks a jubilee, and encourage bird-life as much as possible. I have always been a friend to the birds, and I really believe the destruction of white owls, king-fishers, rooks, starlings, and all insect-eating birds to be about as great an act of folly as the farmer, gardener, or game-keeper can be guilty of. If any further facts respecting the Oak-caterpillar appear, I should only be too happy to either read or communicate them. *T. J. Levett.*

HEUCHERA SANGUINEA.—Complaints are frequently made about the scarcity of flowers on this plant, which I think may be due to lack of frequent removal into rich soil. At Belvoir I have found that the plant soon becomes weak and exhausted if this be not performed. Sometimes, too, it suffers from late spring frosts; but I have never seen it flower so freely as in the garden at Belton House, and on inquiring the cause I was informed the plants were raised from seed two years ago, but they had received no special kind of treatment, and yet were a mass of flowering-spikes, although many of these had been removed. The colour of the Belton flowers varied slightly from the type, and from each other, one plant being of a quite rosy hue. *W. H. Divers.*

VIOLA DUCHESS OF SUTHERLAND.—This variety has flowered remarkably well at Belton House Gardens lately, and Mr. Emmerton speaks very highly of it as a bedding variety. Its colour is a pleasing shade of lavender, the flower is of moderate size, and the habit of the plant compact and neat. *W. H. Divers.*

VAPORISATION WITH XL-ALL.—A correspondent signing himself "B. W." writes in these columns on June 25 for information in regard to vaporising Grapes with XL-All liquid, and I will give my experience for his and others' benefit. I used the vapour on Muscat of Alexandria Grapes two years ago when stoning was nearly finished, the night was followed by two very bright days which scorched the foliage up, but the berries did not suffer at all, neither in appearance or flavour. I did not like undertaking the operation, but thought the vaporiser might as well kill the thrip (which it did thoroughly), as the thrip injure both foliage and berries, but I think if they had been shaded from the bright sun for a day or two afterwards, no more than just the younger leaves would have been injured. The same Vines carried a good crop of fruit last year, and there is a good one on them now. The directions accompanying the stuff say, "Do not vaporise Alicantes or Muscats." In the same house I have Alicante, Gros Colmar, and Gros Maroc, and these Vines were scarcely injured at all. I have never tried it on Black Hamburgh or any other Vines, except those mentioned; but I prefer it to anything else in the way of insect destroyers for general use. No Maiden-hair Fern can put up with it. I have not found it to injure any other plant or flower. *A. J. Nightingale, Redlands Gardens, Northampton.*

A HAILSTORM AT LAMPORT, NORTHAMPTON.—A fearful storm passed over Lamport on Saturday, June 25. The weather was very threatening all day, thundering and lightning, and about 4.30 it commenced to rain, and was followed by hail and snow chiefly, hail that came down so fast that it blocked the drains in the kitchen gardens and pleasure-grounds; the lawns, and the borders, and the kitchen garden were covered with snow and hail to a depth of 1½ inches, breaking off nearly all the leaders of the Scarlet Runner Beans, and the early Strawberries knocked about a good deal, but at present I cannot detect any very serious damage. The thermometer fell to 37° Fahr., but only for a very little while, and then it remained stationary for about an hour and a half at 42°. The rectory garden suffered very much, Potatoes being stripped of their leaves, Parsnips and Strawberry crops quite spoilt, and the majority of the blooms were knocked off the summer bedding plants; in our agent's garden great damage was done generally. The hail and snow had to be removed from his front-door with wheelbarrow and shovel. The storm was quite local, as at the railway station no hail had fallen, and very little rain; and at the next village, about 1½ mile distant, they were cutting hay all the afternoon. The storm came from the south-west. *H. Kempshall.*

CRATEGUS OXYACANTHA VAR. HORRIDA, Hort.

When recently visiting the Belgian State School of Horticulture at Vilvorde, Mr. F. W. Burbidge and

myself were shown an extremely interesting form of the common Thorn, distinguished by an excessive development of spines. It was called var. spinosissimus, but this in the Hand-list of trees and shrubs grown in the Kew Arboretum is given as a synonym of var. horrida, Hort., which name, therefore, is the best to adopt. The accompanying illustration (fig. 5) was kindly drawn by Mr. F. W. Burbidge, and grafts brought home will probably grow in the Cambridge Botanic Garden. The kindly way in which trimmings are kept at Vilvorde for those who may wish to use them as grafts, is worthy of remark; they are heeled-in at the foot of the tree to which they belong, and those who wish may have them. *R. I. L.*

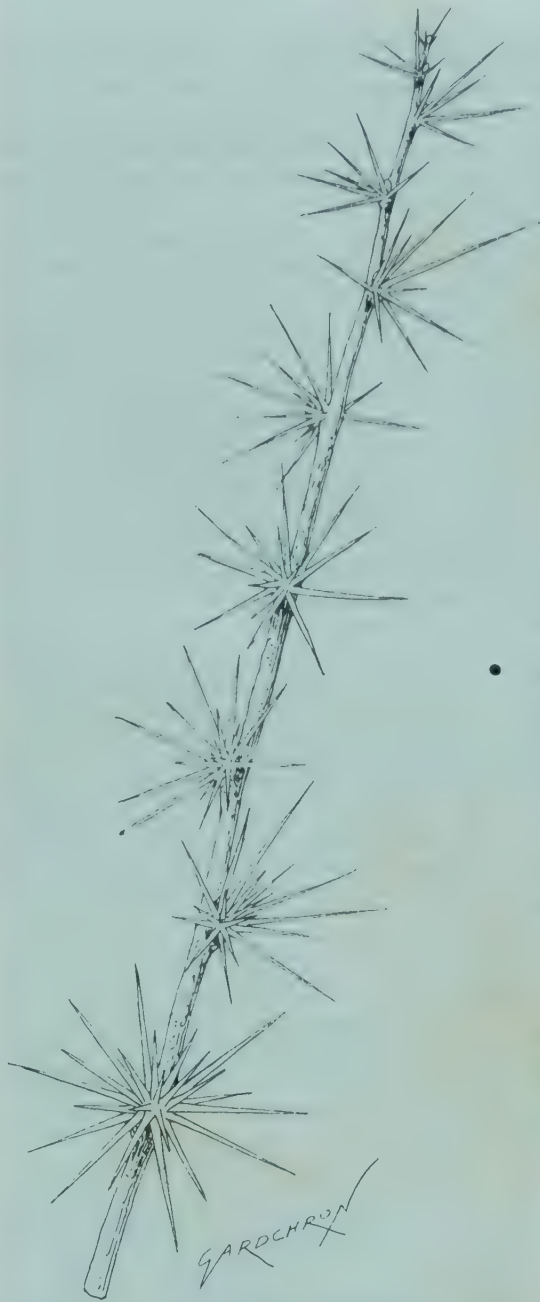


FIG. 5.—CRATEGUS OXYACANTHA VAR. HORRIDA.

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 22.—The Rev. Professor Henslow's second lecture, given again in the Great Vinery on the above date, with Mr. Marshall presiding, secured a very large attendance, fully eighty persons, chiefly young men, and the new lady students, being present. The subject was the interesting one of the "Origin of some Vegetables," a large amount of useful information being furnished that should greatly assist those present in their vocation. So much outside of the ordinary rack of garden knowledge is the information thus furnished in the course of four lectures, it seems almost a pity that a series of questions on points dealt with, and on matters of special garden interest, could not finally be set, and an examination held of the students present, to test their interest and retentiveness. Mr. Henslow, at the outset, regretted that there were no really new vegetables coming

into use. All that did so were but of the old orders or families. He knew of a few plants that he thought might be improved into useful edible vegetables, but these were not the subject of his observations. The extensive Brassica family was first noticed, and examples of the native species shown. The probable origin of many of the best known sections was discussed, lucidly, and free from dogmatism. Root plants, such as Turnips, Radishes, Parsnips, and Carrots, were freely adverted to. The story of the origin of the Student Parsnip, as told by Professor Buckman, was mentioned. Beets and Potatoes were also referred to, and much interesting information concerning them afforded. Special attraction was given to the lecture by the wealth of dried specimens and illustrations at disposal. The next lecture will be on the "Origin of some Flowers;" and in consequence of the interposition of the flower show at Richmond on the 29th, will be given on July 6. A very cordial vote of thanks was given to Mr. Henslow at the close of the lecture.

COMMITTEE MEETING.

JUNE 28.—Seldom has the Drill Hall been more full of exhibits than on the occasion of an ordinary meeting of the committees on Tuesday last. Encouraged, so it would seem, by the Dover House collection of Malmaison Carnations exhibited at the meeting held a fortnight ago, cultivators of this very popular plant showed it in quantity and variety on Tuesday. Never have we seen such a display in the Drill Hall of this type of Carnation as was made by the groups from MARTIN R. SMITH, Esq., Lord SALISBURY, and Messrs. CUTBUSH & SON, and in addition even to these was a splendid group of perpetual-flowering varieties in pots from Messrs. J. PEED & SONS. The collection of MARTIN R. SMITH, Esq., was replete with novelties, four of which were distinguished by the committee's Awards of Merit. The hardy plant nurserymen were largely in evidence, and of their flowers the large showy Paeonies were the principal feature. Sweet Peas, Delphiniums, Campanulas, Begonias, Ferns, and other plants were shown in quantity, and by the Floral Committee a number of awards were made to miscellaneous species. Orchids were not unusually numerous, and a little falling-off may now be reasonably expected. Of fruit there was little shown, but it included a collection of first-rate fruits of the Queen Pine. In the afternoon the Rev. Professor HENSLOW delivered an address to a considerable audience upon certain interesting botanical phenomena suggested by a few of the plants exhibited. We were very sorry to learn that Mr. T. HUMPHREYS, Assistant Superintendent of the Chiswick Gardens, is lying seriously ill from effects of a blow upon the head from a cricket-ball, which occurred a week previous to the meeting.

Floral Committee.

Present: W. Marshall, Esq., chairman, and Messrs. John Fraser, Chas. T. Drury, H. B. May, R. Dean, Wm. Howe, Jas. Hudson, John Jennings, Thos. Peed, R. B. Lowe, Chas. E. Pearson, H. Selfe Leonard, J. Fraser, Jas. Walker, Chas. E. Shea, T. W. Sanders, Herbert J. Cutbush, Ed. Beckett, Geo. Paul, Harry Turner, D. B. Crane, H. J. Jones, Chas. Blick, and J. W. Barr.

From MARTIN R. SMITH, Esq., Warren House, Hayes, Beckenham (gr., Mr. C. Blick), came a magnificent group of Malmaison and other Carnations, including some splendid new varieties of the former. Margot has nice blooms of little softer shade than Prime Minister, Lord Welby has very large flowers of rich colour, Mrs. de Satge is also a very fine flower of splendid character and bright colour, Baldwin has rich pink or rosy-pink flowers. These four varieties of the Malmaison type were recommended Awards of Merit, but others were equally handsome, and a study of them required more time than could be given them under such circumstances as prevailed on Tuesday. Altogether the group was a magnificent one, and a special attraction the whole of the day (Silver-gilt Banksian Medal).

A large display of the pink Malmaison Carnation came from Lord SALISBURY, Hatfield House, Herts (gr., Mr. G. Norman). The plants were staged closely—too thickly, perhaps—together, and the show of bloom was as profuse as possible. The average plant carried about five or six blooms, and few buds were undeveloped (Silver Floral Medal).

Upon the left-hand side of the entrance-door a large space of the floor was beautified by a display of Malmaison Carnations in pots, from Messrs. CUTBUSH & SONS, of Highgate. This group was arranged in glades, and backed by Bamboos: it made a very fine picture. Smaller groups of the highly coloured varieties—The Churchwarden and Prime Minister—were most effective. The blush and white-flowered plants were staged separately. A pretty group of perpetual-flowered Carnations also found a place in this most commendable exhibit (Silver Floral Medal).

Messrs. J. PEED & SONS, Roupell Park Nurseries, Norwood Road, London, S.E., had a group of perpetual-flowered Carnations in pots, immediately on the right hand upon entering the Hall. A large part of this group consisted of an excellent border variety, R. H. Measures, a reddish-crimson variety, large flowered, exceptionally free, and a splendidly behaved calyx. Primrose King, too, was shown, and J. W. Christmas, a fine pink coloured flower. Mr. Measures has a crimson flower of better form than R. H. Measures, but probably hardly so free. This was a very bright group, and the varieties shown were really good (Silver Banksian Medal).

Messrs. WM. PAUL & SONS, Waltham Cross, Herts, made an

exhibit of Roses, for the most part grouped together in bunches in boxes. Some of the charming garden varieties, and Messrs. Paul's newest Teas were well shown. There was a dozen or so of standards in pots, representing Medea, T., climbing Niphotos, T., Enchantress, T., Helen Keller, H. P., Madame Hoste, T., and others (Silver Banksian Medal).

A much variegated *Antirrhinum* was shown by Mr. J. A. RUMCIEMAN, Stourvale Nursery, Christchurch, Hants.

Mr. PHILIP FRY showed a few plants of *Fuchsia New Life*, a red-flowered variety with long corolla.

Messrs. WATKINS & SIMPSON, Neal Street, Long Acre, W.C., exhibited half-a-dozen plants of a variegated dwarf *Tropaeolum* named *Queen of Tom Thumbs*, with deep crimson flowers (Award of Merit).

Messrs. BARR & SONS, King Street, Covent Garden, made a large display with hardy flowers, the group containing a fine show of *Pæonies*, single and double-flowered. Many pretty and interesting *Irises*, too, were included, and Iceland *Poppies*, &c. Messrs. Barr also obtained an Award of Merit for *Philadelphus Lemoinei* (see fig. in *Gardeners' Chronicle*, 1897, p. 89, Vol. XXI), apparently little different to the one elsewhere noticed in Messrs. Veitch's exhibit (Silver Banksian Medal).

Mr. F. G. FOSTER, Brockhampton Nurseries, Havant, had a collection of Sweet Peas in about sixty bunches, each of which was charmingly encircled in Ferns (Bronze Banksian Medal).

Mr. J. HUDSON, Gunnersbury House Gardens, Acton, showed blooms of several *Nymphaeas*, including a few of *Marliac's* varieties. These were *N. lucida*, *N. Laydekeri*, in lilac and rose varieties; *N. stellata*, a blue species grown in heated water out-of-doors; the red *N. Ellisiana*, and *N. Marliacea carnea*; *Chromatella*, lemon-coloured, with deep yellow centre; *rosea*, and *albida* (Silver Banksian Medal).

Sir TREVOR LAWRENCE, Bart., Dorking (gr., Mr. Bain), was recommended an Award of Merit for *Hedysarum multijugum*. This pretty purple-flowering climbing plant was figured in the *Gardeners' Chronicle*, pp. 8 and 9, 1895, vol. xviii.

Several interesting flowers were sent by C. G. VAN TUBERGEN, Junr., Haarlem, and a First-class Certificate was recommended to *Lilium "Marham"*, a small and numerous flowered variety, with brownish recurved segments, the basal portion of each being yellow, and spotted thickly with deep purple.

Messrs. PAUL & SONS, Cheshunt, were recommended two Awards of Merit for Roses, and very dissimilar ones. The first is a garden hybrid from *R. canina* × *R. indica*. *Una*, the seedling, is a pure white flowered semi-double garden Rose, possessing very sweet perfume. The flowers are about 4 inches across, and the foliage and shoots are evidence of its robust habit. The other award was to H. P. Allan Cheales, a most attractive Rose when just opened from the bud. Though not suitable, probably, for exhibition, this charming rich pink-coloured Rose is worthy of a place in every Rose-garden. The under side of the petals is silver-coloured, in the way of John Hopper. It is exceedingly robust, and the shoots in Messrs. Paul's garden have grown to great length. From the Cheshunt Nurseries also was a grand lot of *Pæonies* and other hardy flowers (Silver Banksian Medal).

Lord ALDENHAM, Aldenham House, Elstree (gr., Mr. F. Beckett), staged a group of plants upon the floor under the wall of the Hall. The group had a wavy outline, and was arranged on the dot system over a ground of Ferns and like material. The dot plants consisted of *Codiaeums*, *Liliums speciosum* and *roseum*, *Cordylines*, and *Palms* 8 to 10 feet high. A few *Odontoglossum*, *Carnation*, *Crassulas*, *Celosias*, &c., were also employed. The display covered a large space, and most of the plants in it were finely cultivated specimens (Silver-gilt Flora Medal).

Mr. H. B. MAY of Dyson's Lane Nursery, Upper Edmonton, again made a pretty display of Ferns, choosing on this occasion to illustrate particularly the numerous interesting and handsome varieties of *Adiantum* (Silver-gilt Banksian Medal).

Messrs. BALCHIN & SONS, Hassocks Nursery, Sussex, showed six extraordinary plants of *Phenocoma Barnesii*, each about 3 feet high. The foliage was perfect and beautiful, and the plants were crowned with numerous flowers. They were perfect specimens.

In Messrs. GEO. JACKMAN's group of hardy flowers from Woking Nursery, Surrey, we noticed bunches of Sweet Peas; also double-flowered *Pyrethrums*, *Pæonies*, *Heuchera japonica*, &c.; *Campanula urticifolia plena* as a pot plant, and a plant of the new *Campanula mirabilis*. But the plant as exhibited is scarcely so fine a species as was expected. The leaves are thick and fleshy, almost reniform in shape, but will grow probably much longer, about 1½ inch wide, and slightly serrated all round. The flowers are 1½ inch across, and not quite so much deep. They are axillary and terminal, and in colour the palest blue, and silver-coloured at the base (First-class Certificate).

Messrs. H. CANNELL & SONS contributed a fine group of single-flowered *Begonias*. Some of the best were *King of Begonias*, scarlet; *Rev. F. Gaye*, salmon-pink; *Albert George*, orange-red; *Erl Grosvenor*; *Mrs. Dudley Leigh*, pink; *Mrs. Hyde*, white; *Mrs. H. G. Murray Stewart*, scarlet; and *Miss A. Stewart*, lemon-colour (Bronze Banksian Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, also showed three old plants, 4 to 5 feet high, and nearly as much through of *Lavatera arborea variegata*, they well portrayed the exceeding ornamental character of this variegated mallow.

Mr. B. R. DAVIS, Yeovil Nurseries, Somerset, had a splendid show of tuberous-rooted *Begonias*, single and double-flowered. Both sections were represented by flowers of very fine quality, in size, colour, and form. Some of the

best of the doubles were *Lucanie*, deep carmine; *Mrs. Stothert*, pale lemon; *Miss L. Gott*, pink; *Mrs. W. Herbert Fowler*, palest blush; *Clio*, yellow, good form; *R. B. Parsons*, rose coloured. *Thunderer* and *Florence Nightingale*. The two last-named varieties were recommended Awards of Merit. *Florence Nightingale* has white, almost *Camellia*-shaped blossoms, and *Thunderer* is bright crimson (Silver Banksian Medal).

Messrs. J. VEITCH & SONS showed spikes of flowers representing their strain of *Digitalis purpurea grandiflora*, magnificent in size and colours. An Award of Merit was recommended the strain; also of hybrids between *D. purpurea* and *D. ambigua*; also sprays of *Philadelphus coronarius erecta*, *Hedysarum multijugum*, the red flowered *Escallonia Langleyensis* (see fig. 4, p. 11) of the pretty *Styrax japonica*; *Robini hispida*, *Indigofera decora alba*, and *Magnolia Watsoni* (figured in *Gardeners' Chronicle*, p. 189, 1894, vol. xvi).

A group of upwards of forty plants of *Campanula medium calycanthemum*, in many prettily-tinted varieties; and sprays and plants of the lovely hybrid greenhouse *Rhododrons* were from the same establishment (Silver Flora Medal). Messrs. Veitch had also a very fine collection of *Pæonies*, that made a gorgeous display. Cut flowers, too, were arranged with taste in competition for the Sherwood Challenge Cup. Some of the more noticeable flowers used, were Sweet Peas, Sweet Sultan, Sweet Williams, *Linaria bipartita splendida*, purple, with lighter lip; and the lovely *Schizanthus Grahami retusus*, red, with orange-coloured lip. The variety *alba* is white, with orange-coloured lip. It is a pity we do not see *Schizanthus* more frequently. They are beautiful half-hardy annuals from Chili. Their cultivation is described at p. 8.

Messrs. KELWAY & SON, Langport, Somersetshire, showed a more than usually extensive exhibit of cut-flowers of choice varieties of hardy herbaceous perennials of their own raising, including *Pæonies*, of which *Princess of Wales*, blush, very large; *Chiron*, a purplish-crimson flower of a large size, and very double; *Peter the Great*, similar; *Rosamond*, a purplish-rose, and *Polyphenus* were striking varieties. Other flowers noted were *Eryngium Oliverianum*, of a fine steely-blue colour, and other species of *Eryngium*; *Inula glauca*, in capital heads of deep orange colour; *Pentstemon ornatus Kelwayi*, with bright blue flowers, numerous produced on tall spikes. *Gaillardias* were many and very showy, but without exhibiting much departure in form or colour from old types. One, by name *W. B. Child*, bright yellow coloured variety, obtained an Award of Merit. A white *Delphinium* named *sinense album*, was very pure, and is undoubtedly a pretty variety; *L. podophyllum Somerset*, a very effective yellow variety, received an Award of Merit; *Campanula persica maxima* is an ancient certainly in size, and the colour is light-blue; *Papaver Silver Queen* is apparently a *P. somniferum* variety, more deathly looking than silvery; *Ethionema grandiflorum*, a species with rosy lilac-coloured flowers, making gracefully semi-pendent masses, good for border and rockery. As shown its good points were not seen. *Thymus coccineus*, a bright purplish rose-flowered species, also good for the rockery, the hue of the flowers being decided; *Delphinium nudicaule*, and numerous other *Delphiniums* of the *grandiflorum* section, of which the firm raises so many varieties. A Silver Flora Medal was awarded for the entire exhibit.

Messrs. SUTTON & SONS, seed merchants, Reading, showed *Petunia*, double pink, a fringed variety, sometimes running into green; Sutton's double-flowered *Superb Petunia*, similar to the foregoing in form of flower, but shown in a variety of colours, striped, blotched, and selfs; *Gladiolus*, *Queen of the Roses*—the origin of this variety was not stated, but it appears to be of the *Cypripedium* section, a pretty decorative flower of a pleasing tint. To this an Award of Merit was given.

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, showed a table of cut flowers, of chiefly bulbous plants, including a single-flowered *Pæony* with crimson stripes on a white ground; it was named *P. albiflora striata*; *Hemerocallis aurantiaca major*, a bold rich orange-coloured variety, the flowers having a width of 6 or more inches, very distinct in appearance; *Iris*, including *I. juncea numidica*, with flowers of a reddish-purple colour, coming in corymbs of a dozen or more together (Award of Merit); species of *Brodiaea*, viz., *laxa*, *stellaris*, *congesta*, and *multiflora*; several *Calochortus*, varieties of *Lilium umbellatum* and of *L. Thunbergianum*, exhibiting in both cases some small variations in colour or in form; *L. Szovitzianum*, a pale lemon-coloured species; *L. auratum platyphyllum*, the pure white *L. a. Witte*, and *L. a. rubro-vittatum*; *L. pomponium*, *L. Dahlmansoni*, of a blood-red on the upper side, a cross between *L. dalmaticum* and *L. Hansoni*—a handsome Turk's-cap; *L. rubellum*, n. sp., of a pretty pink colour; *L. Columbianum*, a rich yellow Turk's-cap. Messrs. Wallace have adopted the method of placing the stems of the flowers they exhibit in serpentine folded strips of sheet lead, and standing these on edge in shallow, tin vessels, half-filled with water; it is less troublesome than fiddle bottles and jars, and the moisture given off by the large surface of water tends to give freshness to the blooms (Silver Banksian Medal).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair, and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, J. Gurney Fowler, H. Little, F. Sander, A. H. Smee, E. Hill, W. H. Young, J. Jaques, W. Cobb, H. Williams, S. Courtauld, and T. B. Haywood.

Sir TREVOR LAWRENCE, Bart., the President of the Royal Horticultural Society (gr., Mr. W. H. White), staged a small

group, in which the most prominent feature was the remarkable *Stanhopea Rodigasiana*, an entirely new section of the genus. The flowers, which were produced singly on long pendulous foot-stalks, were six inches across. The sepals, of which the upper one was the narrowest, were concave, cream-white, freckled with rose on the outside; the two lower ones densely spotted with purple on the surface. The column was long, nearly terete at the lower-half, and winged in the upper part, pale green, spotted purple. The very remarkable lip was long and narrow in the basal portion, dark purple, with an ivory-white blotch. The mesochile, or middle division, was composed of two large triangular blades, densely spotted with red, the front angle of each bearing a long bristle-like process. The epichile, or front portion, resembled a long thick tongue, and was also spotted. A very remarkable plant. It secured a First-class Certificate. Sir Trevor Lawrence also showed a grand inflorescence of *Cattleya Warscewiczii*, bearing seven flowers; the fine *Odontoglossum* × *excellens*; *Sanderianum*, *Habenaria rhodocheila*, varieties of *Laelia tenebrosa*, *Masdevallia Barlaeana*, and *Microstylis bella*.

Sir FREDERICK WIGAN, Bart, Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed the beautiful *Laelio-Cattleya* × *Canhamiana* var. *Joyce Wigan*, a superb and large flower, with the sepals and petals silvery-white delicately veined and tinged with rose-colour, and a very handsome labellum, much resembling that of *Cattleya Warscewiczii*, and of an intense purple-crimson (Award of Merit). In the same collection were the typical *L.-C.* × *Canhamiana*; *Sobralia* × *Wigania*, a natural hybrid imported with *S. xantholeuca* (which was also shown). It has a very large flower of a soft yellow tinged with rose. Also with it were *Sobralia Veitchi aurea*, a clear yellow seedling variation of the pretty garden hybrid.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, staged a very fine group made up of forms of *Cattleya Mossiae*, *C. Mendeli*, *C. Warscewiczii*, and other showy species. With them were many remarkable hybrids, prominent being *Cattleya* × *Adela* (*Trianae* ♀, *Percivaliana* ♂), a very handsome novelty with lilac rose-tinted sepals and petals, and rich dark purple-coloured lip (Award of Merit); *Cattleya* × *Harold* var. *Clarissa* (*Gaskelliana* × *Warscewiczii*), a very fine, rose-coloured flower, with a lip of crimson colour in the front part; several fine forms of *Laelio-Cattleya* × *Canhamiana*, *Cattleya* × *Gertrude* (*superba* × *Mossiae*), *Laelio-Cattleya* × *Hippolyta aurantiaca*, with slightly darker purple lines in the lip than the flower formerly shown: *Laelia* × *Stella*, *Epiphrontis* × *Veitchi*, fine purplish of *Disa* × *Veitchi*, *Cypripedium* × *Euryale*, and other *Cypripediums*, a grand plant of the rose-coloured *Phalenopsis* × *Ludlow-violeacea*, and other fine hybrids. Messrs. Veitch also showed some good *Laelia purpurata*, the richly-coloured *Phalaena bicolor purpurascens*; and the remarkable *Vanda cristata superba*. The group was awarded a Silver Flora Medal.

A Silver Flora Medal was also awarded to Messrs. HUGH LOW & CO., Bush Hill Park, for a fine group, in which were at least two grand novelties. These were the handsome *Cypripedium* × *L'Ansoni* (*Morganiae* × *Rothschildianum*), a fine hybrid which in many features, and especially in the breadth of its ivory-white, purple-spotted petals, resembled the famed *C. Stonei platytanum*. The upper sepal is of ivory-white, furnished with numerous purple lines, and the lower one is similar, but smaller, and the lip creamy-white, with rose-coloured face (First-Class Certificate); and *C.* × *Mrs. Reginald Young* (*Lowi* × *Sanderianum*), a very handsome and quaint-looking cross, in which the curved ribbon-like petals of *C. Sanderianum*, with their characteristic undulation, was well displayed. The flower was also of that lurid reddish-yellow, with brownish markings seen in that species (First-class Certificate). Also in this group were a very fine show of large-flowered *Cattleyas*, one fine *C. Mossiae Reineckiana* being specially attractive; also *Epipendrum prismatocarpum*, with four spikes; some fine *Oncidium crispum*, varieties of *Laelia tenebrosa*, *Cypripedium* T. B. Haywood, and *C. Lawrenceanum*, Bush Hill var., very dark-coloured.

Messrs. B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, secured a Silver Banksian Medal for an effective group, in which were *Laelio-Cattleya* × *Edouard André*, a pretty hybrid of the *L.-C.* × *Canhamiana* class, with nearly white sepals and petals, and a lip of velvety-purple hue; *Cattleya* × *Breuteana* (*superba* × *Loddigesii*), which retained much of the features of *C. superba*; the pretty *Cypripedium Lebaudyannum*, *C.* × *Harrisianum superbum*, and other *Cypripediums*; *Pescatorea Lehmanni*, *Aërides expansum*, varieties of *Laelia tenebrosa*, *Thunia Marshalliana*, and other showy species.

Messrs. STANLEY MOBBS & ASHTON, Southgate, were awarded a Silver Banksian Medal for an effective group of *Cattleyas*, with which were *Laelia tenebrosa*, *L. purpurata*, *Miltonia vexillaria*, *Stanhopea tigrina* Ashton, *Lycaste Deppoi virens*, with green sepals; *Laelia tenebrosa aurea*, and other varieties of *L. tenebrosa*, a grand *Odontoglossum luteo-purpureum*, *Oncidium spillopterum*, *O. Lanceanum*, *O. Papilio*, *Cattleya Schilleriana*, *Mormodes pardinum*, *Chysis aurea*, &c.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. Jas. Hudson), showed the clear yellow *Mormodes pardinum unicolor*. W. GILLET, Esq., Fair Oak, Bishopstoke (gr., Mr. Carr), showed a noble form of *Laelia purpurata*. F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent three very distinct forms of *Masdevallia Chimera*. F. P. WHITE, Esq., The Willows, Wargrave, Twyford (gr., Mr. W. Pope), showed *Cattleya guttata* with thirty-two flowers on a spike.

Dr B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. S. Cooke), showed *Odontoglossum* × *excellens* "Mrs. De B. Crawshay," a most remarkable variation, with clear, bright yellow flower of thick texture bearing some large chestnut-brown blotches. The labellum, which resembled *O. triumphans* in form, had a white base, as have the petals in a lesser degree, its centre was decorated with a large chestnut-coloured blotch, and the apex was yellow.

THOS. McMEKIN, Esq., Falkland Park, South Norwood (gr., Mr. A. Wright), showed the fine *Cypripedium Rothschildianum* Falkland Park var. T. W. SWINBURNE, Esq., Corndean Hall, Winchcombe, sent two flowers of grand form of *Sophranitis grandiflora*, that named "giganteum" being 3½ inches across. The Rev. E. HANLEY, Royal Crescent, Bath, sent flowers of *Cattleya Mossiae Wagneri*.

Fruit Committee.

Present: Philip Crowley, Esq., chairman; and Messrs. Jos. Cheal, Jas. H. Veitch, W. Poupart, A. F. Barron, M. G. Geeson, W. Pope, Alex. Dean, J. W. Bates, W. J. Empson, Geo. Wythes, H. Balderson, F. Q. Lane, G. Norman, J. Wilard, Robt. Fife, and T. J. Saltmarsh.

A most attractive exhibit of Tomato fruits was made by Mr. J. Hudson, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton. Sprays of fruit were shown, and also pretty baskets filled with some of the following and other varieties:—Abundance, Golden Jubilee, Peachblow, Sutton's Dessert, Best-of-All; all of these were represented by good fruits. Early Rivers' and Bigarreau de Schrecken Cherries from an out-of-doors wall with south aspect in same garden were also very fine (Silver-gilt Banksian Medal).

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea, showed some fine fruits of Cherry Guigne d'Annonay. This is a good early Cherry, and in this instance it was about ten days earlier from pyramids than Early Rivers.

Excellent fruits of Royal Sovereign Strawberry were shown by Mr. GEO. WYTHES, Syon House Gardens.

A magnificent new Peach was exhibited by Messrs. T. F. RIVERS & SON, Sawbridgeworth. This is named *Thos. Rivers*, and is described as a late variety. All the fruits shown were of large and capital colour, and the flavour was by no means poor. They were forced in a house started on December 20, 1897; and Cardinal and Early Rivers', Nectarine, from the same house, were ripe in April and May. The new Peach, it is said, succeeds equally well in a late house, and it will be likely to prove a valuable addition to our late Peaches (First-class Certificate).

A Silver-gilt Knightian Medal was recommended to a collection of nine first-class fruits of the Queen Pine, shown by A. VON ANDRÉ, Esq., The Warren House, Stanmore. These fruits averaged 5½ lb. each in weight, and in appearance were perfect.

From I. J. ROLFE, Esq., Stamford-le-Hope, Essex, were shown numerous fruits and sprays of some of Tomato Rolfe's Seedling, a large heavy, perfection-typed fruit. Five of the bunches weighed 14½ lb. The variety is now being tested at Chiswick (Cultural Commendation).

WOOD GREEN AND DISTRICT HORTICULTURAL.

JUNE 17.—A very interesting lecture on "Cactaceous Plants" was delivered before the members of this Society by Mr. H. G. BOURNE, F.R.H.S. (Alexandra Palace Gold Medallist), at their meeting on Friday.

After prefacing his remarks with the desire that more interest should be taken in these plants, he said:—

The laws of culture which I shall propound to-night are of my own framing, the results of my own experience, and I am confident if followed correctly will work out the best results. Taken generally, there are about 10,000 varieties of Cacti, true or proper, in about fifteen genera. They were mostly children of the tropics, though some of them were nearly hardy in this country. Among these were *Opuntia*, *Piccolomini*, *Rafinesquiana*, *Echinocactus Simpsoni*. These will reward with a mass of bloom during the summer. They should be planted on rock work, having a south aspect, in equal parts of good sandy loam and brick-rubble. Perfect drainage is needful, and they are best covered by moveable hand lights during the heavy autumnal rains. In frames their culture is good, this being a method extensively resorted to by Continental growers; but owing to climatic changes, the best method of cultivation in this country is undoubtedly the greenhouse.

As regards temperature, it may be surprising to some to hear it never can run up too high, assuming that ventilation be properly attended to. This of course applies to solar heat. When this begins to fail in the autumn, firing must of necessity be carefully attended to. A temperature of 60° to 65° by day, and 50° to 55° by night, will keep the plants in good health; and here it may be well to mention that careful attention to temperature is a good preventative against all sorts of insect pests. There was a great diversity of opinion as to what constituted a fit and proper soil for the successful cultivation of the Cactus. My experience has been such as leads me to the conclusion that good rich maiden loam, fine sand, and brick-rubble, in equal proportions, will grow most varieties well, though if a few pounds of oyster-shells and nodules of charcoal can be included, so much the better. Many growers are greatly in favour of the addition of manure to the compost for Cacti, but I must humbly express my disapproval of this practice. My reason for so doing is the following:—Many varieties of Cacti are subject to sudden rotting off during a damp, foggy winter,

and I am certain that the rank, excessively sappy growth caused by the addition of animal manure not becoming sufficiently ripened is the great fault. Mr. Lees will tell you that this over-indulgence in manures is detrimental to the cultivation of the Autumn Queen, and I venture to assure you that the same applies to the Cactus family. Now, before we proceed any further, it must not be imagined that there is anything particularly difficult in the cultivation of any genus of the Cactus tribe; all that is necessary is proper and careful attention to a few little details which in themselves are all-important, and the neglect of which will soon be manifest in unhealthy appearances of plants and adequate loss of bloom. When you receive some Cactus cuttings or plants from a friend or dealer, carefully overhaul them for insect pests. Should these be present in the form either of Thrips-scale, mealy-bug, or green or black fly, immediate operations must be put in force to eradicate them. Undoubtedly the best remedy for fly is tobacco. Isolate the plants in a frame, and smoke them on two consecutive evenings, taking care that the stems of the plants are at the time quite dry. This will strongly influence the effect of the smoke. They can be well washed with the syringe prior to their removal to the house, not forgetting, if the soil be wet, to turn the pots on their sides, and apply the syringe as much as possible sideways. If the pest assumes the form of scale, Thrips, or bug, dip the cuttings or plants into a solution of 3 oz. of soft-soap to one gallon of water, at a temperature of 100° to 125°, for ten or fifteen seconds. Some amateur growers seem to be afraid to give water in a sufficient quantity to the plants during the growing season, and this is one great reason why they so soon become attacked both above and under ground. So we see that from April to August, during which period most varieties put on their new growth, water must be freely applied both at the roots and overhead by means of the syringe. The question so often met with—How often ought I to water my plants?—can only be answered thus: Give the plants plenty of water when they require it, and when not do not apply it. This question of the application of water is also a very important one, the presence of insects as already mentioned often being traceable to neglect.

It is well to bear in mind that the removal of insects from a Cactus is slightly hampered by surroundings. These are the spines, and in reference to their power of penetration it is better to accept the word of one who knows by his own experience than to experiment yourselves. Some spines, on varieties such as *Echinocactus texensis*, *E. cornigerus*, *Brevihamatus* (central one only), are hooked, and will make as frightful a gash as a tiger-cub's claws. While upon the question of spines, I should like to impress upon you the fact that the variation of colour in the spines is one of the many attractions which the members of the Cactus family possess. One of the finest examples of this peculiarity is found in *Echinocactus Grusoni* (the Golden Cactus). *Echinocactus aureus* is another fine golden-spined sort (but rather rare), while in *Echinocactus bicolor* the spines are so colouring as to assume tints of yellow, red, and amber colour, forming a fine contrast to its rosy-purple flowers. In *Echinocactus begium* the spines are white, tipped with purple. *E. cornigerus* has broad purple spines, which are as strong as steel. The spines of the *Echinocereus candelans* (the Rainbow Cactus), has spines which are all colours of the rainbow, and should be included in all collections. The colours of the stems of some varieties of *Cereus* are also very attractive. *Cereus Jamacaru* is a striking plant by reason of the fine blue colour of its stem. Some of the members of the genera—*Cereus mammillaria* and *Echinocactus*—are remarkable for the handsome fruits which they produce. These fruits are formed after the flowering period, and are particularly handsome. The propagation of Cacti is a very simple process, consisting of seeds, cuttings and offsets; I prefer the propagation rather from cuttings than seed, because in the case of the latter there is a possible doubt of your getting it fresh.

The speaker then followed with a few remarks upon the so closely-allied plants, Succulents, and was accorded a hearty vote of thanks at the close.

HORTICULTURE AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW, BIRMINGHAM.

JUNE 20.—The show of the Royal Agricultural Society opened on the above date in fine weather, at the ancient borough of Sutton Coldfield, whose inhabitants vied with each other in their display of bunting. The showyard was situated in Four Oaks Park, a distance of 9 miles from Birmingham, and the success of the show was largely dependent on the assistance of the various railway companies. The number of visitors on Monday cannot compare with those visiting Manchester last year, 2642 persons having passed the turnstiles, against 4547 at the latter city last year. At Birmingham in 1876 on the first day of the show the visitors numbered 5256.

The first object to notice on entering the park was Messrs. SUTTON & SONS' stand of garden and farm seeds and produce, displayed in a conspicuous manner, a seed-tester and germinator forming a noteworthy feature of the exhibit. Another novel feature was a panoramic exhibit of photographic illustrations of vegetables and flowers raised by themselves or their customers. A fine group of *Gloxinia* plants was also exhibited, in order to show the great progress that has been made in the improvement of this beautiful and popular flower. Potatoes were represented by about twenty-five varieties, some of the best being Sutton's

Windsor Castle, Supreme, Triumph, Satisfaction, Magnum Bonum, Reliance, and the Flourball. The firm likewise showed Peas in capital form as grown in flower-pots, the variety May Queen being especially notable for its heavy crop of pods. The climbing French Bean, with a profusion of pods, was also shown as grown in flower-pots. The Dessert and Golden Nugget Tomato formed a prominent part of the display, the former being a very prolific variety, and excellent for consuming in the raw state. There was much more in this stand that appealed more to farmers than gardeners, of which we omit notice.

The Messrs. WEBB & SONS, of Stourbridge, had perhaps the most imposing section of the stand, viz., that devoted to flowers, where Webb's superb strains were represented by really fine plants in bloom of *Calceolaria*, *Begonia*, *Petunia*, Sweet Peas, Stocks, Lilliums, Gladioli, &c. Vegetables formed another meritorious collection, the Beans, Parsnips, Cucumbers, Tomatoes, Cauliflowers, Carrots, Leeks, Onions and Lettuce being the finest we have seen for so early in the season. Webb's new Peas Pioneer and Senator growing in pots, showed a profusion of long well-filled pods, whilst among the varieties of Potatoes Webb's New Motor was conspicuous for its large size and splendid quality. Messrs. Webb & Sons had decorated the exterior of the Hall with ornamental lawns, flowering plants, Palms, &c., adding materially to the attractiveness of the show-yard.

MESSRS. JAMES CARTER & CO., of High Holborn, London, had an imposing erection 100 feet in length, containing numerous fine specimens of roots and cereals, besides a miniature lawn formed of the finest grasses, and groups of cut flowers brought from their flower farm at St. Osyth in Essex.

MESSRS. LITTLE & BALLANTYNE, nurserymen, Carlisle, exhibited their new Holly, Golden King, and a striking variety of *Cupressus macrocarpa* named *lutea*, both acquisitions to the garden.

MESSRS. HARRISON, of Leicester, showed excellently and well garden together with farm productions, and we noted a fine late Broccoli named Harrison's Victoria, very weighty, and as shown, in grand condition. Good examples of the Leek, Pea, Cucumber, and other vegetables were remarked in this stand. Messrs. DICKSONS, of Chester, exhibited productions of the farm and garden. The horticultural building-trade was well represented by DUNCAN TUCKER, of Tottenham; MESSENGER & CO., Loughborough; WRINCH & SON, of Ipswich and London; whilst Messrs. BAYLISS & INMAN had some unique rustic-work in the form of summer-houses and garden-seats. Messrs. RANSOME showed largely lawn-mowing machines. The excellent garden pottery of C. NEWAY G. WARNE, Ltd., Royal Pottery, Weston-super-Mare, was largely in evidence.

RYDE, ISLE OF WIGHT.

JUNE 23.—The fourteenth annual Rose Show was held at Westmont on the above date, and was opened by the Mayor (Alderman E. MARVIN, J.P.). The exhibits were numerous, and of better quality than last year.

The Gold Medal for thirty-six cut Roses was won by Mr. F. CANT, and the Silver Medal by Mr. R. E. WEST.

Open to the Isle of Wight only.—Mr. J. O. BROOK received a Silver-gilt Medal, and Mrs. MURRAY a Silver Medal for twenty-four cut Roses.

Mr. B. LADHAMS, of Shirley, staged a fine collection of Pinks and hardy herbaceous plants, and received the Isle of Wight Horticultural Imperial Association's Certificate or Cultural Merit.

Mr. E. R. GOOLE, Ryde, staged a non-competitive exhibit of *Pelargonium* cut blooms.

BATH SHOW OF THE NATIONAL ROSE.

JUNE 23.—In connection with the Bath Floral Fête and Band Committee, the National Rose Society held their annual southern provincial exhibition in the Sydney Gardens, Bath, glorious weather prevailing. The date is a week earlier than usual, and this fact, coupled with the backwardness of the season, prevented many noted rosarians from competing, and, as a consequence, the exhibits were not so numerous as they would otherwise have been. But despite the frowns of Nature, the show was in every way good; the exhibits, without exception, were remarkable for quality, in fact, one could scarcely imagine Tea Roses being in finer condition. One of the chief features of the show were the garden Roses, the Tea Roses, and the groups of miscellaneous plants.

ROSES, NURSERYMEN ONLY.

For forty-eight blooms, distinct varieties, prize a Silver Cup, presented by the Mayor of Bath, the winner was Mr. B. R. CANT, Colchester. He staged a lovely collection of blooms, including the varieties Madame Cusin, Caroline Testout, Souvenir de S. A. Prince, Lady Fitzwilliam, Annie Laxton, Kaiserin A. Victoria, and Marie Van Houtte. In this class the flowers of each competitor were clean, of good quality, and well developed. Messrs. D. PRIOR & SON, Colchester, took the 2nd place; Messrs. FRANK CANT & CO., of Colchester, the 3rd.

For the best twenty-four blooms, distinct single bloom varieties, Mr. G. PRINCE, of Oxford, was 1st with what was one of the best lots present, which composed fine examples of Lady M. Fitzwilliam, White Lady, Caroline Testout, Mrs. W. J. Grant, and Innocente Pirola. Messrs. J. B. BURRELL & CO., Howe House Nurseries, Cambridge, were 2nd.

Messrs. D. PRIOR & SON took the 1st prize for twenty-four distinct varieties in trusses of three blooms, his best blooms being Mrs. J. Laing, White Lady, Marie Van Houtte, and Lady M. Fitzwilliam; Messrs. F. CANT & Co. were 2nd.

For the best twelve single blooms of any Rose, except Tea or Noisette, Messrs. D. PRIOR & SON were placed 1st with the variety Lady M. Fitzwilliam; and Messrs. B. CANT with Madame Gabrielle Luizet.

In the Tea and Noisette section of the schedule, the best twenty-four blooms were shown by Mr. G. PRINCE, Oxford. His blooms of Princess of Wales and Comtesse de Nadaillac were unusually fine ones.

Garden Roses.—Thirty-six varieties in not less than three trusses in each, Messrs. COOLING & SON were 1st with the finest collection of these pretty Roses ever exhibited at Bath. All sections of these Roses were well represented, and included their new hybrid Bourbon Rose Purity. Messrs. PAUL & SON showed a collection of garden Roses, which made a good 2nd.

OPEN CLASSES.

The National Rose Society's much-coveted Gold Medal, for three trusses of any new seedling Rose or distinct sport (either not yet in commerce, or not distributed earlier than November, 1897), was won by Messrs. A. DICKSON & SON, nurserymen of Newtownards, Co. Down, Ireland, with lovely blooms of their new Rose, Miss Bessie Brown.

The Tea or Noisette Section of Roses, in twelve varieties, shown in triplets, brought together a fine lot of blooms, and Mr. G. PRINCE was 1st, especially good being his blooms of Cleopatra, Hon. Edith Gifford, the S. A. Prince, and C. de Nadaillac.

For the best twelve blooms of any one variety, Mr. G. PRINCE was again 1st with a beautiful stand of well-formed and richly-coloured Maréchal Niel; and Mr. B. R. CANT was 2nd with lovely flowers of the variety Cleopatra.

For the best twelve single-flowered Roses, of the section "Garden or Decorative," in not less than three trusses of each, 1st, Messrs. PAUL & SON, nurserymen, Cheshunt.

THE AMATEUR CLASSES.

For the best twelve blooms, distinct varieties, A. H. GRAY, Esq., Bath, was 1st in this, which is one of the principal classes for amateurs, and carries Cooling's Cup as its best prize. The winning box contained well-developed flowers, and judiciously selected in regard to colours. There were included: Maman Cochet, Comtesse de Nadaillac, Princess Beatrice, The Bride, Marie Van Houtte, Catherine Mermet, Princess of Wales, Anna Olivier, Golden Gate, Souvenir d'Elise Vardon, Hon. Edith Gifford, and Maréchal Niel. The 2nd prize was taken by that eminent rosarian, Rev. J. H. PEMBERTON, who showed extra fine blooms of Caroline Testout, Madame Victor Verdier, La France, Marchioness of Dufferin, Jean Ducher, and Souvenir d'un Ami. And the 3rd prize was taken by S. P. BUDD, Esq., whose best flowers were Mrs. B. S. Crawford, Madame Cusin, A. K. Williams, Ethel Brownlow, and Rubens.

For the best eighteen blooms of the so-called "Exhibition Roses" of the National Rose Society's Catalogue, and including Teas and Noisettes, A. H. GRAY, Esq., was 1st, with flowers of great beauty; especially so were the varieties Anna Olivier and Edith Gifford. The exhibitors in this competition must be growers of not fewer than 2000 plants.

The Prince Memorial Cup, which is the 1st prize in a competition among growers of not fewer than 500 plants, and must be won for exhibition varieties, fell to Mr. CONWAY JONES, Gloucester, whose box of twelve varieties included some that were unusually beautiful, well-developed blooms.

Rev. J. H. PEMBERTON took the 1st prize for eighteen varieties of garden Roses.

BEST BLOOMS, NURSERYMEN.

The National Rose Society's Silver Medal, of which six are awarded, was won for Hybrid Tea and Noisette Roses by Messrs. A. DICKSON & SON, with the variety Tom Wood. The Silver Medals were awarded to Messrs. BURRILL for the best Hybrid Tea, Lady Mary Fitzwilliam; for the best bloom, Tea or Noisette, to Mr. GEO. PRINCE, Oxford, for Comtesse de Nadaillac.

The Medals fell to amateurs as follows:—To S. P. BUDD, Esq., in the Hybrid Tea, Tea, or Noisette classes, for a bloom of *Alphonse Soupert*; to H. GRAY, Esq., for Hybrid Tea *Caroline Testout*; and to the Rev. J. PEMBERTON, for *Maman Cochet*.

The local classes for amateurs were well represented, and some very fine blooms were shown, generally of varieties previously mentioned.

The show was considerably augmented by other exhibits, as, for example, an excellent group arranged for effect from Mr. J. CYPHER, of Cheltenham, the form of the group being oblong. The plants which were employed included *Cattleya citrina* in quantity, and other species of Orchids, *Codiaeums*, and *Caladiums*. Mr. CATER was 2nd for an excellent group that also comprised many well-grown Orchids beautifully flowered, notable being plants of *Cattleya Morgani*, *C. Mendel*, and *C. Mossie*. Messrs. R. VEITCH & SON, Exeter, staged a splendid lot of herbaceous perennials as cut flowers, together with rare species of plants grown in pots, viz., *Acalypha Sanderiana*, *A. Godseffiana*, and *Dracena Sanderi*. These exhibitors had arranged a miniature specimen of rock-work. Messrs. COOLING staged an excellent group of herbaceous *Paeonies*, as had also Mr. WHITE, Worcester; and Messrs. BARR & SON, Covent Garden, made a great display of herbaceous perennial and bulbous plants; and Mr. F. HOOPER, Bath, showed a very creditable group of Pansies and Violas.

Mr. GOULD, Rock Hall, Bath, vice-President National Cactus Society, received a Certificate of Merit for a large and interesting collection of Cacti, in which were many rare species.

THE CONFERENCE.

During the afternoon a conference was held, and Mr. W. F. COOLING in compliance with a request from the N. R. S., opened a discussion by reading a paper on "How different kinds of Roses should be pruned." This was followed by a discussion in which several leading rosarians took part. A feature of the discussion was the laying down of the principle that there was a great difference between pruning so as to produce Roses for show, and pruning for garden ornamentation. In summing up his paper, Mr. COOLING said the points upon which he wished to lay stress were (1), That a certain section of Roses should not be pruned in the spring. (2), That H. P. and T. Roses intended for garden decoration did not require such hard pruning as was usually recommended. (3), That the most important point in all pruning, at whatever time it was performed, and with whatever variety, was the cutting out of all growths that had flowered to bring about as it were a renewal of the plant; and lastly the peculiarity of certain varieties. The chairman, Mr. R. B. CATER, moved a cordial vote of thanks to Mr. COOLING for his paper.

WINDSOR, ETON, AND DISTRICT ROSE AND HORTICULTURAL.

JUNE 25.—The royal borough of Windsor has a pretty little exhibition each year, and it is nothing more than a horticultural show, having absolutely none of the variety attractions that have been found to be so essential to the prosperous existence of many societies.

But the one we visited on Saturday last, like some of its predecessors, was held on the slopes, just under the very walls of the Castle, and with the patronage of the Queen, and the devotion of an energetic secretary in Mr. Romaine, the Society seems to get along comfortably enough.

From our point of view, interest centres chiefly in the Roses shown in the open classes, beyond which the exhibits are purely of local contribution. But there are usually good Roses at Windsor, and this year those staged were the best seen this season up to last Saturday, being of much better quality than those at the National Society's show at Bath earlier in the week. But the good Roses cost the Society something, for Mr. B. R. CANT won the Queen's Challenge Cup for the second time in succession, and it has become his property, a fact that the Secretary referred to good-humouredly as "a blow." Below we give details concerning the Roses, and of some of the best of the more local exhibitors.

OPEN ROSE CLASSES.

Proof that the Queen's Silver Cup, value 10 guineas, was a coveted prize, is furnished by the fact that there were six competitors in the class. The schedule called for forty-eight blooms, distinct, and one collection was disqualified for inadvertently failing to comply with this condition.

The two best exhibitors were Messrs. B. CANT & SONS, and D. PRIOR & SONS, both Colchester firms. The judges decided in favour of Messrs. Cant, and as this firm won the Cup last season, it now becomes their property. The 1st prize collection contained an even lot of flowers, few of them being of extra or inferior quality. Some of the best, however, were Madame Gabrielle Luizet, Magna Charta, Duke of Edinburgh, Princess of Wales, Marquise Litta, Cleopatra, Mrs. John Laing, Madame Cusin, and Catherine Mermet. In Messrs. A. PRIOR & SON's exhibit there were fine specimens of the following varieties:—White Lady, Souvenir de la Malmaison, Heinrich Schultheiss, Magna Charta, and Mrs. John Laing. There was scarcely a point difference in the two exhibits. The 3rd prize was taken by Messrs. HARKNESS & SONS, Hitchin, Herts, and Bedale, Yorkshire; the other exhibitors being Mr. CHARLES TURNER, Messrs. FRANK CANT & Co., and Mr. GEO. PRINCE, Oxford. The Teas in the last-mentioned exhibitor's stand were very fine, and included a splendid bloom of Comtesse de Nadaillac.

The best collection of eighteen blooms, Teas or Noisettes, came from Mr. PRINCE, whose flowers generally were of good average quality. Messrs. F. CANT & Co. beat Messrs. PRIOR & SON for 2nd place. Mr. PRINCE's varieties included Cleopatra, The Bride, Comtesse de Nadaillac, Catherine Mermet, Princess of Wales, Madame Cusin, Maman Cochet, Alba rosca, Medea, Souvenir d'Elise Vardon, and Princess Beatrice.

Mr. BENJAMIN R. CANT was 1st for twelve distinct Roses in trebles, such varieties as *Gustave Piganeau*, *Ulrich Brunner*, *Madame Gabrielle Luizet*, and *Marquise Litta* telling considerably. Messrs. FRANK CANT & Co. were not far behind as 2nd; and it was a good exhibit that won 3rd prize for Mr. GEO. PRINCE.

The best twelve single trusses of any H. P. or H. T. were from Messrs. FRANK CANT & Co., who showed a pretty group of the distinct coloured Mrs. W. J. Grant. Mr. B. R. CANT followed with *La France*.

Mr. GEO. PRINCE had the best dozen of any Tea or Noisette, showing Comtesse de Nadaillac. Of the showy garden Roses there were three exhibits of eighteen bunches each, there being little difference in the method of showing the flowers in either case. Messrs. PAUL & SON, Cheshunt, were 1st, and in their faced sprays included several good varieties of comparative novelty. *Dawn*, a large single-flowered pink variety; and *Royal Scarlet*, may be singled out as the best of these. Mr. CHAS. TURNER, Slough, was little behind, and in his 2nd prize stand included some excellent bunches.

AMATEUR AND LOCAL CLASSES.

In the class for twenty-four blooms, there were two exhibits, but only one of these should have been staged. This collection, from R. E. WEST, Esq., Firth Dene, Wray Park, Reigate, included many very fine blooms, such as *Captain Hayward*, *Marquise de Castellane*, *Gustave Piganeau*, *Duke of Edinburgh*, and some others. This same exhibitor had 2nd prize for a collection of six H. P. blooms, showing *Marquise de Castellane*; and Mr. WEST won also for twelve Teas and Noisettes, being followed by W. C. ROMAINE, Esq., whose bright little flowers were little inferior. Mr. WEST had the best six trebles.

GROUPS AND FLANTS, &c.

There were as many as seven groups of plants arranged in effect in a half-circle 12 feet by 6 feet. The 1st prize group from Sir CHAS. FIGGOTT, Bt., Wexham Park (gr., Mr. J. Fleming), was a group of very choice plants, and the arrangement left little to be desired. Whether the *Codiaeums*, *Cattleyas*, *Carnations*, *Lilies*, or other species, be considered, they were of fine quality.

Sir ROBT. HARVEY, Bt., Langley Park, Slough (gr., Mr. A. Gillie), was 2nd, and the rest of the exhibitors were considerably behind.

For four specimen plants, the Hon. H. C. LEGGE, Fulmer, Slough (gr., Mr. T. G. Mowbray), was to the front, and showed magnificent examples of two *Codiaeums*, an *Asparagus plumosus*, and an *Alocasia*.

F. BAKER, Esq., Ottershaw Park (gr., Mr. T. Osman), had a well merited 1st prize for four specimen Ferns, and was 2nd also in the previous class.

Table plants were very pretty, and the best group of six was shown by Mr. Jas. Wood, gr. to Lord Boston, Heddon Park, Maidenhead.

In the little light-coloured tent containing the table decorations there were five exhibits, one of these being non-competitive. The 1st prize arrangement by Miss Ed. GOULD was very pretty, with Poppies and Sweet Peas, relieved by *Smilax* and a little Fern. Miss GEE, who was 2nd, used much Honeysuckle, Sweet Peas, *Gladiolus*, *Ampelopsis* sprays, &c. It was a little overdone, otherwise the effect would have been very beautiful. Mr. T. WILLIAMS, of Ealing, had a non-competitive exhibit of much merit.

FRUITS AND VEGETABLES.

The best collection of four dishes of fruit was from Lord Boston. He had two bunches of Black Hamburg Grapes, dishes of Nectarines, Brown Turkey Figs and a Melon. Two fine bunches of Black Hamburg Grapes came from Mr. G. IANE, gr. to Miss RIDGE, Staines, and were 1st in their class. F. BAKER, Esq., was 1st for White Grapes.

Peaches were good generally, a capital dish being shown from the Hon. H. C. LEGGE's garden; and Lord Boston's Nectarines were fine.

The best collection of nine dishes of vegetables came from the Hon. C. S. IRBY, Hitcham Grange, Maidenhead (gr., Mr. D. Paxton), and were good. Miss RIDGE obtained 1st prize in Messrs. Sutton's class for vegetables. The best Tomato shown in a separate class was the variety *Polegate*.

HONORARY EXHIBITS.

These were displayed in a tent devoted to them. A circular group of Roses in pots, fringed with Ferns, from Mr. CHAS. TURNER, Royal Nurseries, Slough, was a pretty feature; and but a few yards from this was a table laden with Orchid treasures from The Dell, Egham, Baron SCHROEDER's garden. This was gay with *Cattleya Mossie*, *Vanda teres*, fine forms of *Odontoglossum crispum*, *Miltonia vexillaria*, *Od. Hall leucoglossum*, *Cypripediums*, &c.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, richly furnished a table with a wealth of *Cattleya Mossie* in great variety and fine quality. *Laelia tenebrosa*, a few *Cypripediums*, and highly-coloured *Codiaeums*, completed this fine exhibit.

Pelargoniums from Mr. CHAS. TURNER made the gayest circular group in the show, the plants being abundantly furnished with flowers of dazzling colours.

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, exhibited flowers of a number of species and varieties of *Lilium*. The varieties of *L. Thunbergianum* alone furnishing an abundance of deep colour. Irises in variety, *Ixias*, *Alliums*, *Paeonies*, and the new pink-flowered *Lilium rubellum* were all very beautiful in Messrs. WALLACE's exhibit.

Mr. W. H. FITT, of 24, Thames Street, Windsor, had bunches of hardy flowers and a few florist's arrangements, and bunches of hardy flowers, all of them being very bright and fresh looking.

Messrs. BARR & SONS, 12, King Street, Covent Garden, London, W.C., made a considerable display of hardy flowers, inclusive of Irises, pretty Iceland Poppies in various colours, and showy varieties of Moutan *Paeonies*.

Another group of hardy flowers came from Mr. ERIC F. SUCH, of the Royal Berkshire Nursery, Maidenhead, in which a number of good hardy species were presented in fine condition.

Messrs. GEO. JACKMAN & SON, Woking, Surrey, had cut Roses, including some good garden varieties; Sweet Peas, *Paeonies*, sprays of hybrid Clematises, and other hardy flowers.

One of the largest displays of hardy flowers was from the nursery of Messrs. JAS. VEITCH & SONS, King's Road, Chelsea, in whose collection was noticed very fine *Paeonies*, *Pyrethrums*, *Gallardia* hybrids, *Heuchera sanguinea*, sprays of *Tropaeolum polyphyllum*, and other pretty things.

Lady MARY CURNIE, Clewer Hill House, Windsor (gr., Mr. F. H. Beney), had a very pretty collection of Sweet Peas in sprays, and for a portion of these obtained Mr. ECKFORD's prize for twelve varieties.

CROYDON HORTICULTURAL.

JUNE 29.—The thirty-first annual show of the Croydon Society was held on the above date in the grounds of Brickwood House, close to East Croydon Railway Station. There are usually some first-class Roses exhibited at Croydon, but the lateness of the present season, coupled perhaps with the fact that the gay town of Richmond was holding its annual show upon the same date, resulted in limiting the extent of the display, the number of competitors being fewer than is general at Croydon. Nor was the quality of the blooms first-rate, but considerably less than the average at Windsor on the previous Saturday, where there was also greater competition. Below we give details of the Rose classes, and of the more important of the plants and fruits. There were other exhibits of a local character, and from cottagers.

ROSES.

For forty-eight Roses, distinct, Messrs. F. CANT & Co., Colchester, beat Messrs. PRIOR & SONS, also of Colchester. The varieties in the 1st prize stand were A. K. Williams, Mrs. Frank Cant, Camille Bernardin, Madame Gabrielle Luizet, Victor Hugo, Marchioness of Dufferin, Mrs. W. J. Grant, Dupuy Jamain, Duke of Wellington, Cleopatra, Duchess of Bedford, Jennie Dickson, Helen Keller, Caroline Testout, Messrs. R. G. Sharman Crawford, Auguste Rigotard, Ernest Metz, Beauty of Waltham, Rubens, Alfred Colomb, Princess of Wales, François Michelin, Marchioness of Downshire, Duke of Albany, Ethel Brownlow, Captain Hayward, Marguerite de St. Amand, Medea, Devoniensis, Crown Prince, Prince Arthur, Maréchal Niel, Duke of Teck, Jules Finger, Madame Cusin, Maman Cochet, Dr. Sewell, Suzanne-Marie Rodocanachi, Niphetos, La France, Abel Carrière, Comtesse de Nadaillac, Dr. Andry, Catherine Mermet, Reynolds Hole, and Souvenir d'un Ami.

Messrs. F. CANT & Co. again beat Messrs. PRIOR in a class for twenty-four Roses in trebles, the display being a very good one. Some of the best were Dr. Andry, Capt. Hayward, Duke of Wellington, Mrs. W. J. Grant, and Beauty of Waltham.

There were three competitors in the class for twenty-four Roses, distinct, reserved to growers not exhibiting in the two classes described above.

Mr. JOHN R. BOX, of West Wickham and Croydon, won 1st prize; the best blooms in his stand were Magna Charta, Margaret Dickson, and Duke of Edinburgh. AUGUSTUS G. GREEN, Roselands Nursery, Colchester, beat Mr. THOS. BUTCHER, of Shirley, for 2nd place.

The best collection of eighteen Teas or Noisettes was from Messrs. D. PRIOR & SONS, and generally the blooms were of moderately good quality. The best of the varieties were Caroline Kuster, Madame Cusin, Innocente Pirola, Anna Olivier, Maman Cochet, Marie Van Houtte, Ernest Metz, and Cleopatra. Messrs. FRANK CANT & Co. were 2nd in this case, and included a fine bloom of Madame A. Etienne.

In a class for twelve Roses of one variety, the beautiful and distinct variety Mrs. W. J. Grant gained 1st prize for Messrs. D. PRIOR & SON; and in a similar class for twelve blooms of a Tea or Noisette Rose, the variety Souvenir d'Elise Vardon won 1st prize for Mr. A. G. GREEN, Roselands Nursery, Colchester. Messrs. PRIOR & SONS were 2nd with Souvenir de S. A. Prince.

Thirty-six Roses distinct (amateurs). The Challenge Cup in this class was won by A. SLAUGHTER, Esq., Jarvis Villa, Steyning, the only exhibitor. The blooms staged were small and not so satisfactory as could be wished in a cup class.

In the following class the same exhibitor was again the only competitor, but the general quality of the Roses was rather better.

The best collection of twelve Roses of one variety was from E. M. BETHUNE, Esq., Denne Park, Horsham, showing moderate sized blooms of A. K. Williams.

In the class for twelve Roses distinct from growers of fewer than 2000 plants, the best of three exhibitors was P. G. C. BURNAND, Esq., Hill Grange, Reigate. His varieties were as follows, and the blooms better than might be expected in comparison with less limited classes, Duke of Edinburgh, La France, Gustave Piganeau, Catherine Mermet, Pride of Waltham, A. K. Williams, Rosieriste Jacobs, Dupuy Jamain, Horace Vernet, General Jacqueminot, La France No. 2, and Prince Camille de Rohan; E. M. BETHUNE, Esq., was 2nd.

Among the same class of growers, E. M. BETHUNE, Esq., was 1st for twelve Teas or Noisettes, distinct, the best of these being Comtesse de Nadaillac, Souvenir d'Elise, Anna Olivier, Catherine Mermet, Perle des Jardins, and Madame de Tartas; E. MAWLEY, Esq., Rosebank, Berkhamsted, was 2nd.

The best collection of four Roses, distinct, in trebles, came from P. G. C. BURNAND, Esq., his varieties being Caroline Testout, Gustave Piganeau, Comtesse de Nadaillac, and A. K. Williams; G. MAWLEY, Esq., was 2nd here, and showed good blooms of Tea varieties.

In both classes for growers of fewer than 500 plants, the 1st prize was withheld.

Coming to growers of fewer than 500 plants, the class for six Roses, distinct, was won by W. D. FRESHFIELD, Esq., The Wilderness, Reigate, his best blooms being Grace Darling and Magna Charta; and this exhibitor won 1st also for six Teas or Noisettes, distinct.

LOCAL CLASSES.—For twelve Roses distinct, a new challenge cup was offered to amateurs residing within 2 miles of Croydon Town Hall. This was won by A. C. GIFFORD, Esq., Croydon, South Norwood, who had a creditable collection; and there were two other competitors. The best group of

six H.P.'s distinct, was from M. HODGSON, Esq., Shirley Cottage, Shirley, who won also for the best six Teas or Noisettes.

PLANTS.

The best group of plants arranged in an oval-shaped group 18 feet by 14 feet, came from PHILIP CROWLEY, Esq., Waddon House, Croydon (gr., Mr. J. Harris). This was exceedingly meritorious, the constituent plants being no less remarkable for quality than the disposition of them was tasteful. General stove and Greenhouse species of the choicer kinds with a few Orchids and Cannas in flower were used. The 2nd prize group from C. LANE, Esq., Burntwood, Upper Caterham, had also much to recommend it.

The best and only collection of six Cordylines was from PHILIP CROWLEY, Esq. It included finely coloured plants of Gladstone, Majestica, Regalis, Babbisti. The best Caladiums were from Mr. J. W. Hicks, gr. to C. D. LORD, Esq., Dunearn, Crescent Wood Road, Sydenham Hill, and were moderate-sized plants.

The best specimen plant with ornamental foliage was a magnificent specimen of *Cycas revoluta*, profusely furnished with fronds, and in luxuriant health. The best specimen flowering plant was *Bougainvillea glabra*, from E. H. COLES, Esq.

PHILIP CROWLEY, Esq., had also the only collection of six Exotic Ferns, *Davallia Mooreana* and *D. filijensis* elegans being capital plants. The worthy chairman of the Fruit Committee of the Royal Horticultural Society won 1st prize also for nine Ferns distinct, in pots not exceeding 6 inches in diameter, and he was followed by Mr. G. LEWRY, gr. to Mrs. BLAKE, Duppas Hill.

The best competitive tuberous Begonias were from Mr. W. Sparshott, gr. to Mrs. HALL, Stanton House, Parkhill Rise, in a collection of nice plants. They were very good. This exhibitor had 1st prize for Gloxinias, showing really beautiful and profusely bloomed plants. The best group of Gloxinias intermixed with a few ornamental foliage plants was from Mr. W. Gladwell, gr. to S. SMET, Esq., Werndee Hall, South Norwood.

For a smaller group of miscellaneous plants the 1st prize was taken from two other competitors by Mr. A. DYER, gr. to T. PEACOCK, Esq., Chichester Road, Croydon.

The six most graceful table plants were from Mr. G. Eales, gr. to J. GLAISHER, Esq., Heathfield Road, Croydon; but Mr. C. LANE, gr. to E. H. COLES, Esq., won for twelve plants, showing a very pretty collection.

FRUIT.

Mr. J. FRIEND, The Gardens, Rooknest, Godstone, won 1st prize for white Grapes in three bunches, with Foster's Seedling, not perfectly finished; and Mr. C. BLURTON, gr. to H. COSMO-BONSOR, Esq., M.P., Kingsworth Warren, had the best black Grapes in Hamburg.

Capital Royal Sovereign Strawberries took 1st prize in the Strawberry class for Mr. C. BLURTON, gr. to H. COSMO-BONSOR, Esq., M.P., Kingswood Warren. Mr. O. JEAL, gr. to Miss WATERALL, Waddon Lodge, had the best Cucumbers; and S. OSMOND, Esq., Ottershaw Park, Chertsey, the best Melon, in a medium-sized fruit of Al.

HONORARY EXHIBITS.

Messrs. J. LAING & SONS, Forest Hill Nurseries, London, S.E., had a group of tuberous-rooted Begonias, which faced the entrance to the large tent. The varieties were chiefly double-flowered, and beside creating a fine display, they were individually of much merit.

Messrs. H. CANNELL & SONS, Swanley, also staged double-flowered Begonias, the varieties, Miss M. Mitchell, Mrs. Towers Clarke, pink; Mrs. Norton, pink; Sir J. B. Maple, crimson-scarlet, Dr. Nansen, deep crimson; and Ida Grace, rich salmon; and S. Bryceson, being most noteworthy.

A third exhibit was from Mr. H. J. JONES, Ryeolett Nursery, Hither Green, Lewisham. The choicest of these were Ryeolett Salmon, double; Mrs. G. F. Hall, salmon-pink, double; Miss Clara Walter, double pink; Snowstorm, single; and Mrs. E. Beckett, carnine, single.

Mr. JNO. R. BOX made a grand display of tuberous-rooted Begonias and ornamental-foliage plants in a group of very attractive appearance, his double and single varieties being remarkable for the best quality.

Hardy flowers were shown by Messrs. BARR & SONS, King Street, Covent Garden; Messrs. J. CHEAL & SONS, Crawley; and Mr. J. BOX, West Wickham and Croydon, who had also a group of Gloxinias in pots.

RICHMOND HORTICULTURAL.

JUNE 29.—The twenty-fourth annual exhibition was held amid glorious weather, on Wednesday last, in the Old Deer Park. The Rose classes, open to all exhibitors, were good, there being considerable competition, and the flowers were by no means inferior in quality. The principal class at Richmond calls for a larger number of Roses than any one class at most exhibitions, the one for forty-eight trebles being still retained there. The Challenge Cup offered in this class was secured by the veteran exhibitor, Mr. B. R. CANT, of Colchester. The classes for groups of plants and specimen plants were fairly well filled, particularly the former. There were very fine Orchids shown in competition, as well as by honorary exhibitors. Florists' arrangements, and table decorations, too, were very good, but our limited space forbids us referring to these in detail. Finally, beyond the fruits and vegetables, were vegetables shown by Richmond Allotment-holders, in every sense creditable to the exhibitors.

The Richmond show owed much to the honorary exhibits from the trade.

ROSES.

The 1st class, which called for the enormous number of 144 Roses in forty-eight varieties, was won by Mr. B. R. CANT, Colchester, from several other exhibitors. Accompanying the 1st prize in this class is a handsome Silver Challenge Cup, presented to the Society by its founder. Mr. CANT had a grand lot of blooms in this collection, and especially were the following varieties of excellent quality:—Mrs. John Laing, Hellen Keller, La France, Antoine Riviere, Dr. Andry, Marie Verdier, Lady M. Fitzwilliam, Duke of Edinburgh, Heinrich Schultheiss, Ulrich Brunner, Clara Watson, Madame de Watteville, Mrs. Sharman Crawford, and M. Gabrielle Luizet. A collection from Messrs. F. CANT & Co., also of Colchester, was 2nd, and a close 2nd too, his Roses being bright in colour, fresh, but perhaps embracing rather less substance. But there were some capital trebles in the stand. Messrs. PRIOR & SON, of Colchester, were 3rd.

In the twenty-four treble class, the 1st prize went to Messrs. D. PRIOR & SON, who staged the following varieties in good condition:—Rubens, Prince Arthur, Tom Wood, Marchioness of Downshire, Marie van Houtte, Duke of Edinburgh, Mrs. Sharman Crawford, Dupuy Jamain, Marie Baumann, Mrs. J. Laing, La France, Ulrich Brunner, and Lady M. Fitzwilliam. Messrs. F. CANT & Co. followed in this class. Mr. CHAS. TURNER was 3rd.

The best collection of twelve distinct varieties of Roses in trebles came from Mr. C. TURNER, Royal Nurseries, Slough; the varieties here were Mrs. J. Laing, Marie Baumann, La France, Duke of Edinburgh, Caroline Testout (very fine and large), Gustave Piganeau, Ulrich Brunner, Marchioness of Downshire, Duke of Wellington, Souvenir de President Carnot, Duke of Teck, and Mrs. Crawford; Messrs. D. PRIOR & SONS were good as 2nd prize exhibitors in this class, showing very even, fresh flowers; Messrs. F. CANT & Co. were 3rd.

The best twelve blooms of a H.P. were from Mr. B. R. CANT, who had bright, moderate-sized blooms of Duke of Edinburgh; Mrs. W. J. Grant was the variety shown by Messrs. F. CANT & Co., who were 2nd; and Messrs. PAUL & SON, Cheshunt, were 3rd, with Rev. Alan Cheale.

The best Tea Rose was Rubens, twelve pretty blooms being staged by Messrs. F. CANT & Co.; the delicate tint of this Rose is very charming. 2nd, Messrs. D. PRIOR & SONS, Colchester, with Souvenir de S. A. Prince.

R. E. WEST, Esq., Reigate, won a special prize offered by Lady Ellis for twenty-four blooms in not fewer than twelve varieties; and was also 1st for the prize offered by Sir G. S. Meason, J.P., for twelve Teas and Noisettes.

In the amateur class for twenty-four Roses, distinct, single trusses, and for twelve Roses, distinct, single trusses, the 1st prizes were won by W. ROMAINES, Esq., Old Windsor (gr., Mr. J. Guttridge). In the latter class, J. P. KITCHEN, Esq., Manor House, Hampton (gr., Mr. C. Warwick), was a good 2nd.

PLANTS.

The principal class for a group of miscellaneous plants arranged for effect was won by a beautiful exhibit from Mr. H. E. FORDHAM, The Nurseries, Twickenham. A groundwork of Ferns and other foliage plants was relieved by excellent Gloxinias, Lilliums, Cannas, Cattleyas, Hydrangea paniculata, Tuberoses, Carnations, &c.; and the pretty Gypsophila, used with some liberality, gave a light and pleasing finish to the attractive picture. Mr. M. VAUSE, of Leamington, was 2nd.

The best semicircular group of plants in 60 square feet, in competition for a special prize given by W. Wilson, Esq., was from Sir F. WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. C. Want). Some fine Odontoglossums helped greatly to the pretty effect presented by the group.

Six zonal Pelargoniums were exceedingly good from W. LITTLE, Esq., Baronshalt, East Twickenham (gr., Mr. G. Watts); the plants were about 4 feet across, and extremely well and evenly flowered.

For the Society's prize of three guineas, for a group of Carnations in pots, space not to exceed 50 feet, a very good group of plants of the Malmaison type from A. F. PEARS, Esq., Spring Grove, Isleworth (gr., Mr. Farr), took 1st prize. Most of the plants were one year old, and carried one flower, and in foliage and flower they were very commendable.

The best collection of six plants of show and decorative, as well as fancy Pelargoniums, were from Mr. C. TURNER, Royal Nurseries, Slough, who took 1st prize in each class. W. STACEY, Esq., West Drayton (gr., Mr. John Wiggins), was 2nd, for show and decorative varieties. Mr. Turner's plants were very pretty.

The winner of the class for six exotic Ferns was Mr. Farr, gr. to W. F. PEARS, Esq., Spring Grove, Isleworth, these included a very fine specimen of *Polypodium aureum*, a fine *Dicksonia antarctica*, and *Davallia filijensis*. Mr. Farr also had the best specimen foliage plant in *Asparagus plumosus*.

For the best group of six fine foliage plants, Mr. W. VAUSE, Leamington, won 1st prize, showing two *Codiaeums* and four *Palms*. Coleuses in a collection of six plants were shown well by J. B. HILDITCH, Esq., Asgitt House, Richmond (gr., Mr. A. Meaton); and Caladiums, also in a collection of six plants, by W. CUNARD, Esq., Orleans House, Twickenham (gr., Mr. T. Allsop). The Caladiums were very pretty. 2nd, Mr. Want, gr. to Sir F. WIGAN, East Sheen.

A collection of six *Palms* from V. CUNARD, Esq., Orleans House, Twickenham (gr., Mr. T. Allsop), won a special prize offered by J. D. McDONAGALL, Esq. The specimens were of considerable size and well grown.

The class for six stove and greenhouse plants in flower was entered by only one exhibitor, viz., M. W. VAUSE, and apparently a 2nd prize was awarded the exhibit.

W. H. ELLIS, Esq., Clovelly, Hounslow, had 1st prize for nine Gloxinias, showing in very fine form indeed. For the best six plants of any Orchid species in flower, H. LITTLE, Esq., Baronshalt, East Twickenham, beat Sir F. WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young). Mr. LITTLE's exhibit included excellent specimens of Cattleya Mendell, C. Warneri, very fine, with fourteen flowers, C. Mossiae, C. gigas, Laelia grandis tenebrosa, and Cypripedium Veitchi. In Mr. YOUNG's exhibit were Cypripedium Rothschildianum, Cattleya Mossiae, and C. Warneri, all very good indeed.

Dr. D. H. SCOTT, The Old Palace, Richmond (gr., Mr. R. Johnson), won a special prize for a group of tuberous rooted Begonias, and showed well, the single varieties being best and more abundantly represented.

The best twenty-four bunches of hardy herbaceous cut-flowers were shown by Messrs. BARR & SONS, King Street, Covent Garden. We noticed good bunches of Linaria macedonica, Erigeron glabellus, Calochortus, Iris orientalis maximus, Irises, Heuchera sanguinea, &c. Messrs. PAUL & SON, Cheshunt, closely followed for 2nd place; and Messrs. A. W. YOUNG & CO., Stevenage Nurseries, were 3rd.

FRUIT AND VEGETABLES.

The class for six dishes of fruit distinct was won by Mr. T. OSMAN, Ottershaw Park Gardens, Chertsey. He had Black Hamburgh and Buckland Sweetwater Grapes, Violet Hatve Peaches, Royal George Nectarine, Brown Turkey Figs, and Hero of Lockinge Melon, all of them good in quality; but a close 2nd was W. H. ELLIS, Esq., Clovelly, Hounslow.

The best Black Grapes were from the Earl of ONSLOW, Clandon Park, Guildford (gr., Mr. H. V. Blake), presumably Prince's Black Muscat; and the best white Grapes were Buckland Sweetwater from Mr. THOS. OSMAN.

Mrs. FLACKER, Coombe End, Kingston Hill (gr., Mr. Bolton), had the best Peaches in Stirling Castle; and W. CUNARD, Esq., the best Nectarines in Early Rivers.

In Strawberries, Mr. J. Gibson, gr. to G. H. WATT, Esq., was 1st for two dishes with Royal Sovereign and President; and ANDREW PEARCE, Esq., 1st for one dish with President.

Messrs. SUTTON & SONS special class for vegetables was won by Sir PATRICK TALBOT, Glenhurst, Esher (gr., Mr. C. J. Waite). He showed Early Gem Carrots, Supreme Potatoes, Perfection Tomatoes, Magnum Bonum Cauliflower, White Leviathan Onion, and Duke of Albany Pea; all of these were decidedly good. E. H. WATTS, Esq., Devonhurst, Chiswick (gr., Mr. Jas. Gibson), was 2nd. Messrs. CARTER's special class for nine dishes was also won by Sir PATRICK TALBOT, his produce being equally good in this class.

The Society's prize for the best twelve dishes of vegetables was well won by Sir PATRICK TALBOT, Glenhurst, Esher (gr., Mr. C. J. Waite), the produce being most praiseworthy. The Rev. O. L. POWELL, Woburn Park, Weybridge (gr., Mr. A. Basile) was a good 2nd.

HONORARY EXHIBITS.

Messrs. FROMOW & SONS, Sutton Court Nurseries, Chiswick, displayed a group of Japanese Acers in variety, and a pretty group of stove and greenhouse plants.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea, had a large group of Roses in pots, backed by finely flowered plants of Hydrangea paniculata. From Mr. JOHN RUSSELL, Richmond Nurseries, was a beautiful group of variegated and handsome foliaged hardy plants in pots. There was considerable variety in this group, and the plants of which it was composed were individually choice and well cultivated specimens.

Cannas from Messrs. H. CANNELL & SONS, Swanley, were gorgeous. There were about sixty varieties, and staged in a semicircular group they were the prettiest feature in the large plant tent. They were in 5-inch pots, and foliage and flowers were handsome.

Messrs. JACKMAN & SONS, Woking, had a stand of hardy flowers. Mr. W. SPOONER, Arthur's Bridge Nursery, had several boxes of garden and Tea Roses, the pretty little Perle d'Or being very good and abundant.

Messrs. B. S. WILLIAMS & SON, Upper Holloway, London, staged a group of Orchids, including many of those noticed in another column in the report of the Royal Horticultural Society's show; and Messrs. J. PEED & SONS, Roupell Park Nurseries, Norwood Road, London, had their group of Carnations previously noted at the Drill Hall.

A group of greenhouse and hardy plants was shown by Mr. W. THOMPSON, Sheen Nurseries, Richmond. Mr. AMOS PERRY, Winchmore Hill, London, N., had one of the brightest and largest displays of hardy flowers. Messrs. F. SANDER & CO., St. Albans, staged a group of new plants and Orchids, including an extraordinary fine form of C. gigas.

THE GUILDFORD HARDY PLANT CO., Guildford, staged a very pretty group of alpine plants in the form of an alpine garden, the design being carried out very finely. Messrs. R. WALLACE & CO., Colchester, showed Irises, Lilliums, and hardy bulbous flowers; and T. G. FOSTER had a pretty collection of sprays of Sweet Peas. Messrs. BARR & SONS, King Street, Covent Garden, showed hardy flowers.

A capital group of Orchids was shown by HENRY LITTLE, Esq., Baronshalt, Twickenham. This group included very fine varieties of Cattleya Mossiae, Cymbidium Lowianum, C. Rothschildianum, &c., and many other species in excellent condition.

Messrs. T. F. RIVERS & SON, Sawbridgeworth, Herts, had an exhibit of fine and choice fruits, the most interesting being some splendid fruits of the new late Peach, Thos. Rivers, even finer than those shown on the previous day at the Drill Hall. Then there were Apples of 1897, and Apples ripened in 1898; also dishes of choice Cherries, Nectarines, &c.

Messrs. CUTBUSH & SONS, Highgate, London, had a large

group of Malmalson Carnations; and Mr. B. R. DAVIS, Yeovil Nurseries, a group of tuberous-rooted Begonias.

Mr. J. HUDSON, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, had an exhibit of fruit trees similar to the one he staged at the Temple Show; and some Nymphaea blooms from the same gardens were shown.

THE LEEDS FLOWER SHOW.

JUNE 28.—An excellent display in nearly all the classes was made at the Leeds Show, held on the above date; and the exhibitors having done their part, the only point at issue is the support afforded the Society by the public, which in this, as in every other floral exhibition is essential to ensure the success and continuation of a show of this nature.

FRUIT.

The chief feature in the exhibition was the very fine exhibits of fruit, which, although not extensive, were of excellent quality.

The first in the ten dishes' class was the Earl of HARRINGTON, Elvaston Castle (gr., Mr. Goodacre), whose collection comprised a good example of a Queen Pine-apple, excellent Cannon Hall Muscat and Black Hamburgh Grapes, and a nice dish of Beauty of Bath Apple.

For the best three bunches of Black Hamburgh Grapes, 1st, Mr. GOODACRE, with shapely bunches; 2nd, Lady BEAUMONT, Carleton Towers (gr., Mr. Nicholls); and 3rd, W. SHEEPSHANKS, Esq., Winsley Hurst (gr., Mr. Large).

In the class for three bunches of any other variety of black Grapes, the Earl of ZETLAND, Aske Hall (gr., Mr. Nicholas), was 1st, with good Madresfield Court; 2nd, Sir J. W. PEASE, Bart., Hutton Hall (gr., Mr. McIndoe), with Madresfield Court, having good berries, that were rather lacking in colour.

In three bunches of white Grapes, Lady BEAUMONT (gr., Mr. Nicholls) was 1st, with fine examples of Buckland Sweetwater, having large berries and bunches, splendidly finished; 2nd, W. SHEEPSHANKS, Esq.; 3rd, Sir J. W. PEASE, Bart., M.P.

For six Peaches, the Earl of HARRINGTON was 1st; 2nd, J. D. ELLIS, Esq. Six Nectarines, 1st, Earl of HARRINGTON; 2nd, J. D. ELLIS, Esq., J. P. Scarlet-fleshed Melon, 1st, Earl of ZETLAND; 2nd, W. F. PEPPER, Esq.

For a collection of Tomatoes, six dishes, a very interesting class, the 1st prize was won by Lady BEAUMONT, whose collection had in it fine fruits of Polegate, Challenger, Frogmore Selected, &c.; 2nd, Lord BARNARD, Raby Castle (gr., Mr. Tullett), who showed good fruits of Golden Queen, Golden Jubilee, &c.

GROUPS, OPEN.

The large groups in the open class were arranged generally with much good taste, and the committee is to be commended for providing a large tent with high sides, a point often overlooked. The 1st prize was won by Messrs. R. SIMPSON & SON, of Selby, with an arrangement that was light and full of grace, and containing moreover many good plants; 2nd E. B. FABER, Esq. (gr., Mr. W. Townsend), the group forming a very charming whole, and comprising several nice plants of Cattleya, Odontoglossum, Lillium, and well coloured Crotons; 3rd, Mr. J. S. SHARPE, Almondsbury, with another light arrangement carried out with choice subjects.

GROUPS, AMATEURS.

In these groups exhibitors were confined to within 7 miles of Leeds. The 1st prize in this competition was taken by FAIRFAX RHODES, Esq. (gr., Mr. R. Masou), with an original and tasteful, nicely finished arrangement; 2nd, C. F. TETLEY, Esq., Westwood (gr., Mr. J. Eastwood); 3rd, M. KITCHEN, Esq. (gr., Mr. A. Gamble).

FERNS.

The best six exotic species, 1st, FAIRFAX RHODES, Esq. (gr., Mr. R. Masou).

The best six hardy Ferns, FAIRFAX RHODES, Esq. Pelargoniums, though not shown in great numbers, were of good quality. 1st for six show varieties, Mrs. TETLEY, Westwood.

Three show varieties, 1st, Mrs. TETLEY, Fox Hill (gr., Mr. J. Eastwood).

The best six Fuchsias were shown by Messrs. R. SIMPSON & SON, Selby; and the best specimen greenhouse plant was shown by the Marquis of ZETLAND, and the second best by Mr. J. S. SHARPE; E. B. FABER, Esq., was 1st with a fine specimen Cycas.

The best six ornamental foliage plants were those from the Marquis of ZETLAND's garden; and the second best from Messrs. R. SIMPSON & SON, Selby. The Marquis of ZETLAND had the best six stove or greenhouse plants.

For six Orchids in flower, 1st, E. B. FABER, Esq. (gr., Mr. W. Townsend), who showed a capital piece of Cattleya Mossiae, a good Odontoglossum crispum among others; 2nd, Mr. R. EICHEL, Bradford; 3rd, Mr. J. SUNLEY, Monk Fryston.

For a specimen Orchid, 1st, Mr. J. W. MOORE, Rawdon; 2nd, Mr. R. EICHEL; 3rd, E. B. FABER, Esq.

Gloxinias were very fine indeed, good plants in handsome varieties being in evidence. The 1st prize for six plants went to C. J. RUSHWORTH, Esq., Horsforth (gr., Mr. T. Smith); 2nd, S. WHITAKER, Esq., Horsforth (gr., Mr. B. Mollett).

ROSES.

Roses were fine in quality, and in fair numbers. In the class of forty-eight distinct varieties; 1st, Messrs. DICKSON & SONS, Newtownards, whose collection included splendid blooms of The Frigate, Liberty, Catherine Mermet, Ulster, and Rubens.

Messrs. HARKNESS & SON, Jedale, showed good examples of La France, Capt. Christy, Merry England, &c.

All the other classes of Roses were well filled with good varieties and excellent blooms.

Cut flowers were very well shown in bouquets, the chief prize-winners being Messrs. PERKINS & SON, of Coventry.

The Committee did wisely in having as a judge for the bouquets and hand-baskets the Lady Mayoress of Leeds, Mrs. C. F. TETLEY, who most kindly offered to award the prizes, and in so doing gave great satisfaction.

Messrs. CLIBRAN, of Altrincham, exhibited a grand collection of Pæonies, including some good blooms of the up-to-date varieties; these were interspersed with cut herbaceous flowers and decorative plants.

Mr. A. J. HALL, of Harrogate, exhibited (not for competition) a charming stand of cut-flower devices, which included some very original and beautiful combinations of colour, and showed great taste.

The show was opened by the Lord Mayor of Leeds (C. F. TETLEY, Esq.); and Mr. CLAYTON, in responding to the toast of "The Judges," at the subsequent luncheon, expressed the wish that the fine weather which had favoured the opening might encourage the Leeds citizens to attend the show in numbers, and so ensure the success of what was undoubtedly a very fine exhibition.

PLANT NOTES.

TOCOCO FORMICARIA.

PLANTS of this interesting Melastomad were exhibited at the last Ghent Quinquennial by M. Linden, under the name of Miconia vesicaria, and one of them has recently been kindly presented by M. Linden to Kew. The genus Tococa comprises some thirty species of tropical shrubs, all natives of South America. In general characters they resemble the familiar Cyanophyllum, but they differ in having smaller, hairy leaves, and, in regard to the majority of them, in having a pair of bladder-like projections on the petioles or at the base of every leaf-blade. In some of the species these "bladders" are an inch long, and nearly as much in diameter. T. formicaria is a shrub 4 to 6 feet high, with opposite lanceolate leaves, 8 inches long and 2 inches wide, glossy-green, and covered with short, erect, soft purplish hairs; the bladders are as large as Horse-beans, green and hairy, entrance to them being through a pair of holes at the base of the midrib on the under-side of the leaf. It is supposed that these bladders serve the same purpose as the large hollow spines on the bull's-horn Acacia, namely, as an abode for ants, which in their turn protect the plant from browsing and other enemies. Whatever their use they are very remarkable in appearance, and the plant is worth a place among stove-shrubs on this account alone. W. W.

LAW NOTES.

IN BANKRUPTCY.

Re THOMAS FOX, FLORIST, PENZANCE.

The above-named debtor appeared for his adjourned public examination at the Truro Bankruptcy Court recently before the Registrar. Replying to questions put by the Official Receiver, the debtor denied that he neglected his business in order to go about the country as a local preacher. He always understood that flower-growing was a very profitable thing, and that it was not necessary to know the business. After he went into the business he discovered that he had made a mistake, and the result of his trading was, that he had been brought to his present position. He could only say that his deficiency of £1400 had gone in payment of bills, and for labour done. He had had one transaction with a money-lender. He borrowed £20 10s., and signed a promissory-note for £26 10s., to be paid at the rate of £5 per month. He paid one instalment of £5, and had a writ served upon him for the balance, incurring a further charge of £3 10s. The debtor was eventually allowed to pass his examination.

TRADE NOTICE.

THE firm of W. L. Lewis & Co., Orchid Importers, of Southgate, London, has been dissolved. The business will in future be carried on by Messrs. Stanley-Mobbs & Ashton at the same address.

KIRKE'S PLUM.

I FIND this Plum generally takes high rank as a dessert variety on the exhibition table. It is universally acknowledged to be one of the most delicious Plums in cultivation, and it came to my notice the other day that in a large garden where Plums are extensively grown, Kirke's has good crops, but on the wall and in the open as standards, the same could not be said of any other variety. Probably its hardy character and vigorous growth may account in some measure for its fruitfulness in a season when the Plum crop is quite scarce in many places. Though Joseph Kirke's name will go down to posterity as associated with this Plum, he did not raise it, though he did a great deal in the direction of getting it cultivated. It has been in cultivation many years, as I find it in a list of Plums published in 1817. Kirke died in 1864, at the great age of 96 years. Dr. Hogg states in his *Fruit Manual* that this Plum was first introduced by Joseph Kirke, who had a nursery of 6 or 8 acres of ground at South Kensington, which was in part surrounded by the walls of Cromwell's garden, and occupied a part of the site of the present Natural History Museum; and from this nursery came many of the trees which were planted in the orchard of the old Chiswick garden. He used to exhibit from this nursery at the early meetings of the Royal Horticultural Society, collections of Apples and Pears, and was a regular attendant at the meetings. Kirke once stated that he first saw the Plum which bears his name on a fruit-stall near the Royal Exchange, and that he afterwards found that the trees producing the fruit were in Norfolk; he found them out, obtained grafts, and propagated it, thus bringing it into cultivation. Dr. Hogg's account of what he terms its true origin was in the grounds of Mr. Poupart, then a market-gardener at Brompton, and about the spot occupied by the lower part of Queen's Gate, where it sprang up as a sucker to a tree which had been planted to screen a building.

The name of Kirke is also associated with several Apples, such as Scarlet Admirable (a synonym of Hollandbury), Golden Reinette, Lemon Pippin, and Lord Nelson; though it is doubtful if he actually raised any of them—certainly not Lemon Pippin, as mention is made of that variety about the middle of the eighteenth century, and was in cultivation, no doubt, many years before. Kirke retired from business about 1845, and became an inmate of Huggin's College at Northfleet, where he died. In the early part of the present century, Brompton was famous for its well-cultivated nursery-grounds and gardens, and they are not quite extinct yet. R. D.

THE ROSARY.

ROSES IN SCOTLAND.

MANY rosarians in the South may be glad to hear how the northern Roses have fared, and what are our prospects in regard to the flowers. To this end I have cut out of the *Scotsman* of June 21 "R. M. O. K.'s" timely remarks and useful hints. It is also a good omen for a great extension of Rose-culture in the North, for which there is ample room, to find the *Daily Scotsman* discussing the season of Roses, under the yet bolder heading of "Science and Nature." D. T. Fish, 12, Fettes Row, Edinburgh. ["R. M. O. K." in our contemporary, after discussing much that applies to Rose-culture in all parts of these islands in the matter of planting, manuring, pruning, selection of varieties, enemies of the Rose, and endorsing the general lament that Maréchal Niel is too tender for Scotland, gives his opinion of the present as a Rose season. He says "It has up till now been a bad Rose season. The early spring growth, strong and vigorous, was arrested by the frosts and cold winds of April and May, with the result that generally the plants have a shrivelled and unhealthy appearance. As a further consequence of this long-continued check, the bushes are infested with green-fly and Rose-grub. In the West of Scotland these unfavourable conditions are only present

in cold, exposed situations, and flowers will not be much behind the average; but in the East, except in protected localities, there is every likelihood that the Rose will this year be a failure." ED.]

Obituary.

PROFESSOR FERDINAND COHN.—This distinguished botanist died suddenly at Breslau, on Saturday, June 25, of heart disease. He was born in 1828, and obtained the chair of botany at Breslau University in 1859, in succession to Dr. Goepfert. His best-known work is entitled *Die Pflanze*. In recent years he had laboured with success in the field of bacteriology, and he wrote a book on *The Development of Microscopic Algae and Fungi*, showing the destructive action of parasitic fungi and bacteria. —*Times*.

MARKETS.

COVENT GARDEN, JUNE 30.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. ED.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, 12 blooms	3 0-4 0
Azalea, doz. sprays	0 6-0 9
Carnations, pr. doz.	
blooms	1 6-3 0
Eucharis, per dozen	3 0-4 0
Gardenias, per doz.	
blooms	1 6-3 0
Gladioli, white, doz.	
sprays	0 8-0 9
Lilium Harris, per	
dozen blooms	3 0-4 0
Lily of the Valley,	
dozen sprays	0 6-1 0
Maidenhair Fern,	
per 12 bunches	4 0-8 0
Mignonette, 12 bun.	2 0-4 0
Orchids:—	
Cattleya, 12 bms.	6 0-9 0
Odontoglossum	
crispum, 12 bm.	2 0-4 0
Pelargoniums, scar-	
let, per 12 bun.	4 0-6 0
— per 12 sprays	0 4-0 6
Roses, Tea, per doz.	0 6-1 0
— yellow (Pearls),	
p r dozen	1 0-2 0
— pink, per dozen	3 0-6 0
— Safrano, p. doz.	1 0-2 0
— red, per dozen	2 0-4 0
Stephanotis, doz.	
sprays	1 6-2 0
Tuberose, 12 blms.	1 0-1 6
ORCHID-BLOOM in variety.	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz.	4 0-12 0
Aspidistras, p. doz.	12 0-30 0
— specimen, each	5 0-15 0
Azalea, per dozen	24 0-36 0
Calceolaria, per doz.	9 0-12 0
Coleus, per doz.	4 0-6 0
Crassula, per doz.	12 0-18 0
Dracenas, each	1 0-7 6
— various, p. doz.	12 0-24 0
Ericas, various, per	
dozen	12 0 30 0
Evergreen shrubs,	
in variety, p. doz.	6 0-24 0
Ferns, small, p. doz.	1 0-2 0
— various, p. doz.	5 0-12 0
Ficus elastica, each	1 0-7 6
Fuchsias, per doz.	6 0-9 0
Foliage plants, per	
dozen	12 0-36 0
Heliotropes, p. doz.	7 0-9 0
Hydrangea various	
per doz.	10 0-24 0
Liliums, various,	
per dozen	12 0-30 0
Marguerites, p. doz.	6 0-12 0
Mignonette, p. doz.	4 0-6 0
Palms, various, ea.	2 0-10 0
— specimens, ea.	10 6-84 0
Pelargoniums, doz.	12 0-18 0
Rhodanth, per doz.	5 0-6 0
Scarlets, per doz.	4 0-8 0
Spiraea, per dozen	6 0-9 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Tasmanian,	
cases, various,	
comprising Sc.	
Nonpareil, and	
F. Crabs	18 0-22 6
Apricots, per box	0 7-1 0
— baskets	3 6 —
Bananas, bunch	8 0-10 0
Cherries, English,	
white, sieves	3 0-5 0
— blacks	4 0-5 0
— French, sieves	3 6-6 0
— box	2 0-3 0
Figs, per dozen	3 0-5 0
Grapes, English,	
Hamburgh, per	
lb.	1 3-2 0
Grapes, Belgian, lb.	0 10-1 0
— Channel Isles,	
per lb.	1 0-1 3
— Muscats, per lb.	1 6-2 6
Gooseberries, per	
sieve	2 0-2 6
Melons, each	1 6-2 0
Nectarines, doz.	4 0-8 0
Peaches, per doz.	
(according to	
size)	6 0-10 0
— Second quality	2 0-4 0
Pines, each, from	2 0-4 0
Strawberries, per lb.	0 8-2 0
— Southampton,	
baskets	1 6-3 6
— Kent, pecks	3 0-6 0

REMARKS.—The small quantity of big Asparagus was in great request to-day. Peas are coming on fast, and will, with the present sunshine, fill out rapidly, and prices may be expected less before the close of the week. Cherries are coming on; some Black-heart at 4s. per sieve of 24 lb., which is the recognised weight, were very good, bright, bold, sound fruit. The supply of foreign vary a good deal, and some are very good, and the prices vary according to package, &c. Some splendid Pines are now coming, more of the Queen shape, but I am not able to decide the sort. Strawberries have shown the lack of sunshine in poorness of colour, but they may now be expected to come on fast; and I am informed that crops are good, as are also those of Cherries. Of course, fine weather has a marked influence on the ripening of these last two fruits. The supply of Gooseberries not being very heavy, prices have improved, but not very much, seeing 2s. 6d. is the top price.

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus, English,	
natural, home-	
grown, p. bun.	3 0-4 6
— Worcester	1 6-2 0
— English, Sprue,	
large bundles	0 6 —
— Argentineuil	5 6 —
— Victoria	7 6 —
— Foreign, large,	
up to	7 6 —
Artichokes, Globe,	
per doz.	0 9-1 6
Beans, English	
(Dwarf), lb.	0 6-0 8
— Channel Islands,	
per lb.	0 6 —
— French, flats	2 6-3 6
— Broad, sieve	1 0-1 3
Beetroots, per doz.	1 0 —
— p. tally of 60	4 0-5 0
Cabbage, open, doz.	0 6 —
— open, p. tally	1 0-2 0
Cauliflowers, Eng-	
lish, per dozen	1 0-2 6
Cress, doz. punnets	1 6 —
Carrots, New, bun-	
ches, per dozen	1 3-1 6
Celery, now, per	
bundle	1 0-1 3
Cucumbers, p. doz.	2 0-3 0
Endive, new, p. doz.	1 6-2 0
Garlic, per lb.	0 4 —
Horseradish, foreign	
per bundle	0 9-1 0
Leeks, new, dozen	
bunches	2 0 —
Lettuce, Cabbage,	
home-grown,	
per doz.	0 6-0 8
— Cos, per score	0 8-1 0
— Paris Cos, home-	
grown, per dozen	0 10-1 2
Marrows, Vege-	
table, per dozen	3 0-5 0
Mint, per dozen	
bunches	2 0-3 0
Mushrooms, per lb.	0 8-10 0
Onions, Egyptian,	
bags	5 0-5 6
— Green, per doz.	
bun.	1 6-2 6
Parsley, per dozen	
bunches	2 6-4 0
Peas, Eng., white,	
per bushel	2 0-2 6
— bags	4 6-5 0
— Blues, Harri-	
son's Glory, per	
bushel	3 6 —
Potatoes, Channel	
Isles, Kidneys,	
cwt.	6 0-6 6
— New Bedford	7 0 —
— St. Malo, cwt.	5 6-6 0
— Cherbourg, cwt.	5 0-6 0
— Old, per ton	110 0-120 0
Radishes, Round,	
breakfast, per	
dozen bunches	
(home-grown)	1 3-1 6
Salad, small, pun-	
nets, per dozen	1 3 —
Shallots, new bun-	
ches, per dozen	2 0 —
Spinach, Spring,	
per bushel	1 6-3 0
Tomatoes, English,	
per lb.	0 4-0 5
— Channel Isles,	
per lb.	0 3½-0 4
Turnips, new Eng.,	
per dozen	4 0-5 0
Watercress, p. doz.	
bunches	0 4-0 8

POTATOS.

Kidneys, 6s. to 7s.; Cherbourg and St. Malo, 5s. 6d. to 6s.; home-grown, 6s. to 10s. per cwt. Old Potatoes, 110s. to 120s. per ton. John Bath, 32 and 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: June 29.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that the seed trade, as might be expected, is now quite stagnant, to-day's market being bare of both buyers and of business. Offers of new French Trifolium are coming to hand. Full prices are asked for Mustard and Rapeseed. The sale for Bird seeds is at present meagre. As regards Blue Peas and Haricot Beans there is no movement either in value or demand. Linseed is also quiet.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending June 25, and for the corresponding period of 1897, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1897.	1898.	Difference.
s. d.	s. d.	s. d.	s. d.
Wheat	27 0	40 8	+ 13 8
Barley	19 9	24 3	+ 5 3
Oats	18 6	20 7	+ 2 1

FRUIT AND VEGETABLES.

GLASGOW: June 29.—The following are the averages of the prices at this market during the past week:—Apples, Canadian Spy, 24s. to 26s. per barrel; ditto, Russet, 24s. ditto; ditto, Western States (Winesops), 20s. to 22s. do.; ditto, Russets, 18s. ditto; Tomatos, Jersey, 6d. to 7d. per lb.; Grapes, home, 3s. 6d. per lb.; ditto, foreign, 6d. to 1s. ditto; Gooseberries, 3s. 6d. to 4s. per stone; Cabbages, 7d. to 10d. per dozen; Cauliflowers, Dublin, 2s. 6d. do.; Herbs, 1d. to 2d. per bunch; Mint, green, 6d. to 9d. per bunch; Onions, 6s. 6d. per cwt.; do., Portugal, 14s. to 16s. per case; Parsley, 2s. per stone; Potatoes, 1s. per stone (best); Carrots, 8s. to 10s. per cwt.; Peas, 4d. to 5d. per lb.; Cucumbers, 3d. to 5d. each; Lettuces, round, 6d. to 1s. per dozen; do., Cos, 6d. to 1s. do.; Radishes, 9d. to 1s. 6d. per dozen bunches; Horse-radish, 1s. 6d. to 2s. per bundle; Mushrooms, 1s. to 1s. 2d. per lb.; Beetroots, 7d. to 8d. per dozen; Spinach, 1s. 6d. to 2s. per stone; Rhubarb, 2s. 6d. to 4s. per cwt.; Turnips, white, 5d. to 10d. per large bunch; Broccoli, 2s. 6d. to 3s. per dozen; Greens, 10s. per ten dozen; Asparagus, 1s. 3d. per bundle; Sytyos, 6d. per bunch.

LIVERPOOL: June 29.—Average of the prices at undernoted markets:—St. John's: Potatoes, 1d. to 2d. per pound; Peas, 1s. 4d. per peck; Asparagus, 2s. 6d. to 4s. per 100; Cucumbers, 4d. to 6d. each; Strawberries, English, 6d. to 1s. 3d. per lb.; Gooseberries, 3d. do.; Cherries, 6d. to 8d. do.; Apricots, 1s. per dozen; Grapes, home, 2s. to 3s. 4d. per lb.; Pine-apples, English, 5s. each; Mushrooms, 1s. 4d. per lb. Birkenhead: Potatoes, 1s. 2d. to 1s. 4d. per peck; do., new, 1d. to 1½d. per lb.; Peas, 10d. to 1s. 4d. per peck; Asparagus, 2s. to 3s. per 100 Cucumbers, 2d. to

5d. each; Apricots, 9d. to 1s. per dozen; Gooseberries, 2d. per lb.; Cherries 6d. to 10d. do.; Strawberries, 6d. to 1s. do.; Grapes, home, 2s. 6d. to 3s. 6d. do.; Mushrooms, 8d. to 1s. do. North Hay: Potatoes, per cwt., Jersey, 5s. 6d. to 6s.; Early Regents, 7s. to 8s. 6d.; new, per 21 lb., 2s. to 2s. 3d.; Turnips, 6d. to 8d. per dozen bunches; Carrots, 6d. to 8d. do.; Onions, foreign, 6s. to 6s. 6d. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Lettuces, 6d. to 9d. per dozen; Cucumbers, 1s. to 2s. 6d. do.; Cauliflowers, 2s. to 2s. 6d. do.; Cabbage, 4d. to 8d. do.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (−) the Mean for the week ending June 25.	ACCUMULATED.				(More +) or less (−) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 2, 1898.	Below 42° difference from Mean since January 2, 1898.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.				
0	1 −	76	0	+ 113	− 227	7 +	131	28.6	13	28
1	0 aver	93	0	+ 83	− 222	2 +	99	12.1	28	30
2	2 +	111	0	+ 115	− 216	3 +	90	9.6	28	29
3	1 +	122	0	+ 42	− 207	0 aver	83	9.2	35	31
4	1 +	115	0	+ 27	− 215	0 aver	83	8.5	37	31
5	1 +	120	0	+ 59	− 243	1 −	79	9.4	34	32
6	1 −	94	0	+ 115	− 217	7 +	113	18.9	24	33
7	1 −	102	0	+ 110	− 244	7 +	95	16.1	26	35
8	0 aver	111	0	+ 83	− 156	4 +	92	14.4	36	38
9	2 −	87	0	+ 101	− 168	9 +	121	17.2	25	31
10	0 aver	106	0	+ 135	− 134	5 +	92	16.3	34	34
* 0 aver	114	0	+ 188	− 93	5 +	101	11.6	38	41	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

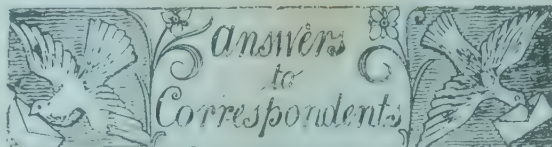
The following summary record of the weather throughout the British Islands for the week ending June 25, is furnished from the Meteorological Office:—

"The weather during this period was very unsettled and rainy in Ireland, Scotland, and the north of England. In the south and south-east it was fine and dry during the earlier half of the week, but towards its close the rainy conditions extended to those districts also. Thunder and lightning occurred from time to time in most parts of the kingdom.

"The temperature was slightly above the mean in 'England, N.E. and E.,' the 'Midland Counties,' and 'England, S.,' and just equal to it in 'Scotland, E.,' 'England, S.W.,' 'Ireland, S.,' and the 'Channel Islands,' but in the remaining districts it was a little below the normal. The highest of the maxima were recorded during the earlier days of the period, when they ranged from 79° in 'England, S.,' and from 74° in 'England, E.' and the 'Midland Counties,' to 69° in 'Ireland, N.,' and 66° in 'Scotland, N.' The lowest of the minima, which were registered on the 22nd in Scotland, and on the 23rd in Ireland and England, ranged from 49° in 'Scotland, E.,' to 48° in 'England, N.W.,' and to 50° in the 'Channel Islands.'

"The rainfall was more than the mean in nearly all districts, but was only just equal to it in 'England, E.' and the 'Midland Counties,' and was rather below it in 'England, S.' In the northern and western districts generally the excess was either very large or considerable.

"The bright sunshine was deficient in all districts excepting the 'Midland Counties.' The percentage of possible duration ranged from 38 in the 'Channel Islands,' 37 in the 'Midland Counties,' and 35 in 'England, E.,' to 25 in 'Ireland, N.,' and to only 13 in 'Scotland, N.'"



AN OLD SLUG AND WORM-INFESTED KITCHEN GARDEN: R. M. The heavy dressings of gas-lime in the autumn, followed by deep trenching, and leaving the surface rough, will do much to sweeten the soil, destroy slugs, wire-worms, and cause the disintegration of the excessive amount of nitrogenous matter in the soil. This trenching should be followed in February by a heavy dressing of quicklime which should merely be dug into the soil one spit deep, and all sowing and planting be postponed for one month at least. No stable or other manure should be applied to the land for the first season, but if found necessary for pushing on certain crops suitable artificial manure may be afforded. The next year the land should be trenched two spits deep, that which is the middle spit (2nd) being brought to the top, and the next year the spit at the bottom of the trench that was first thrown down may be brought to the middle position. A moderate amount of quicklime may be applied to such parts of the soil as have not been dressed.

BOOKBINDER: A. G., Lower Edmonton. Mr. Zaehnsdorf, Cambridge Circus.

GRAPES: H. G. Your Grapes are badly spotted; we fear it is too late to do anything, but you might try syringing them with liver-of-sulphur, 1 oz. to 1 gallon of water. Remove every spotted berry and burn it.

INSECT: W. T. The beetle in your Dahlias is one of the weevils, *Ornithorhynchus picipes*. There is also a green caterpillar, which we cannot name.

LONG-HANDLED SHEARS: H. Either way of using is right.

MUSHROOMS: J. Gachelin. The bed, as you say, may be filled with spawn; but how do you know that it is living spawn now? It may have exhausted itself in running in the bed, and from lack of heat, moisture, or nitrogen, have failed to produce a Mushroom. We should not suppose that you will gather true Mushrooms from it after this lapse of time. Better start anew.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—R. A. *Astrantia major*.—J. T. *Lælia grandis tenebrosa*.—L. P. 1, *Leucothoe axillaris*; 2, *Spiræa Lindleyana*; 3, *Polygonum complexum* (?), no flowers; 4, *Cornus sibirica*; 5, *Hippophae rhamnoides*; 6, *Polygonum cuspidatum*. W. G. 1, *Inula glandulosa*; 2, *Hibiscus sinensis* (*Althea frutex*); 3, *Anthericum lineare variegatum*. T. D. *Limnantes Douglasii*.—W. T. B. 1, *Oncidium flexuosum*; 2, *Ixora coccinea*; 3, *Bambusa Fortunei variegata*; 4, *Goldfussia* (?), send in flower; 5, *Clorodendron squamatum*; 6, *Carex variegata*; 7, send in flower; 8, *Maranta Makoyana*.—J. H. *Ixia*, one of the garden forms.—G. Dance. *Tamarix germanica*; a shrub much planted at our seaside resorts.—J. W. *Barbarea vulgaris*, double flowered; *Allium Moly*.—J. H. B. *Eucalyptus globulus*.—M. A. 1, *Cratogeomys Aronia*; 2, *Ulmus campestris*; 3, *Cornus sanguinea*, common Cornel.—A. W. *Lophospermum scandens*.—W. J. W., Carlisle. *Hordeum jubatum*.—W. P. *Odontoglossum Coradinei*, a natural hybrid of *O. Lindleyanum*.—J. D. B. 1, *Calycanthus fragrans*; 2, *Cypripedium Parishi*; 3, *Dendrobium clavatum*.—R. T. N. Both the *Cattleya Mossiae* and *C. Warscewiczii* (gigas) are good varieties, but not sufficiently distinct to be of extraordinary value.—A. L. P. *Dendrobium moschatum*.—Rascher. *Ægopodium Podagraria* (Goutweed, British).—Rev. W. G. P. The cut-leaved Lime, a garden variety.—A. W. B. *Heracleum giganteum*.—C. H. W. *Stachys lanata*.—G. S. *Abelia triflora*.—Flowers secured to luggage-labels. 1, *Inula glandulosa*; 2, *Campanula glomerata*; 3, *Erigeron caucasicus*; 4, *Sedum tortuosum variegatum*; 5, *Poa trivialis variegata*; 6, *Phalaris arundinacea variegata*.—Nevé Brothers. *Veronica pinguifolia*. J. McL. 1, *Pernettya mucronata*; 2, *Olearia*? next week.—*Tempus Fugit*. 1, not found; 2, *Strobilanthes Dyerianus*; 3, *Anthericum lineare variegata*; 4, *Erica obbata*; 5, *Erica ventricosa coccinea minor*.—K. & T. *Salvia sclarea*.

PEACHES: *Anxious*. The fruits sent have the appearance of being at some earlier period attacked

in a slight degree by mildew. The effect has been to arrest the extension of the skin at some places, which then, under pressure of the sap, bursts. You can do nothing now, but you ought to guard against an attack another year by using some of the recommended antidotes.

PEAS: J. D. See reply to "Cymro" in our issue for last week.

ROSE: J. Chapman & C. Pearce. We cannot undertake to name varieties of the Rose; send it to some large grower of Roses.

SEEDLING CARNATION: H. E. In form as good as its parent, Miss Jolliffe, and in colour a rich shade of crimson. Certainly worthy of being preserved, either as a border, or winter-flowerer under pot-culture.

SOLANUM JASMINOIDES: E. T. M. Would be hardy against a wall in mild winters, or with very little protection. It is hardy in the Isle of Wight.

SPOTTED PELARGONIUMS: Long. The spots on the leaves are due to a fungus (*Ramularia geranii*). The foliage is disfigured, but otherwise the disease should not be serious, and with care is easily got rid of. The remedy is spraying with Bordeaux Mixture in the "modified" form, described in this paper in August, 1897. Spray frequently this season, and burn the leaves as they fall or become much discoloured. Look carefully after next season's plants to have them hardened off before planting.

STRAWBERRY CULTURE IN POTS: W. F. V. S. The runners should be now rooted on small squares of turf that has been a year in stock, or in 3-inch flower-pots, with one hollow piece of crock at the bottom, and filled with a similar kind of loam, made very firm by hand. Read last week's calendar for "Fruits under Glass," and con this calendar from time to time for hints as to treatment. You would be enabled to pick early fruit say in March and onwards from plants placed on the two upper shelves of your glasshouse. The description of Strawberry culture in pots is too lengthy for us to insert in this column.

TOMATOS: Subscriber. Undoubtedly attacked by a fungus, probably *Peronospora*, but we cannot be sure from a cursory glance. There are so many fungi which attack the Tomato. Try syringing with weak Bordeaux Mixture, or with liver-of-sulphur, $\frac{1}{2}$ to 1 oz. to a gallon.—Cheshunt. Probably a form of the "Sleepy Disease," described by Mr. George Massee, *Gardeners' Chronicle*, vol. xvii. 1895, p. 707. No cure. Clear out root, top and soil, and char the whole of these.

VINES: A. R. N. Keep the heat at not less than 60° at night, and 75° to 80° by day, and afford air more or less in volume according to the weather. This matter will require unremitting attention on most days, as changes are frequent, and the thermometer should be constantly consulted. Do not syringe the Vines, but maintain moisture in the air by wetting the paths and border several times on fine days, scarcely at all on dull ones, and do not close the house at any time unless more or less humidity be afforded. Buy a manual on the Vine.

VINES NOT FRUITING: A. B. The shoots sent have a most impoverished appearance, and we should suppose that from some cause or another, the Vines have lost their chief feeding-roots. Examine the border in several places, near to and distant from the Vinery, and send us samples of the roots and the soil, both from near the surface and 1½ to 2 feet deep.

COMMUNICATIONS RECEIVED.—A. K. B.—T. Footo.—F. A. W.—J. H. M.—D. T. F.—C. T. D.—E. Webb & Sons.—J. L.—A. H.—R. D.—A. B. C.—H. R.—G. Woodgate.—E. B.—W. J. B.—R. M. Newbury.—J. O'B.—E. C.—J. J. W.—F. P.—C. de B.—F. A. W., Vermont.—A. K. B.—E. A. W., Florida.

PHOTOGRAPHS, SPECIMENS, ETC., RECEIVED.—J. B.—Lady H.—F. F.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE Gardeners' Chronicle.

SATURDAY, JULY 9, 1898.

THE CHRONICLE OF A LITTLE CORNISH GARDEN.

NE.—Of course, I am more interested in my young Rose-bushes than in any of other plants now glorious. Not that I have sympathy with that gardening system which has the exhibition-table ever ahead, of which Rose-growing is but too often an example. The Rose, however, is so full of variations, both literary and personally reminding, that it must always possess an interest far beyond that which its beauty would afford. For, great as is the beauty of the Briars and some other single-flowered species, as graceful as is the natural habit of their growth, I fail to see either any special beauty or form possessed by the mass of hybrid-perpetuals, or the smallest element of grace in their habit as usually—and to some extent forced—grown in the garden. They frequently afford an example of the lust of the market (who is sometimes but a market-gardener who has missed his vocation) for substance and size at all costs. Nevertheless, I grow a fair number, and, as I have said, am especially interested in them, but not, I fancy, from the same point of view that I admire the beautiful buds of Madame Bérard, the exquisite flowers of the Red Damask (one of the most deliciously-scented and delicately-coloured of Roses), or the free growth and abundant clusters of white flowers of Félicité-Perpétue, which is a post-by strides and bounds. There is, however, one characteristic which gives the Rose a special interest and value, and that is, its practically general possession of fragrance. This is not generally recognised in thinking of the Rose, and the peaking of the Rose's scent is its heterogeneity. Scarcely two Roses smell exactly alike, and whole classes are marked off by their distinct odours. Moreover, it is not the flowers alone which are thus characterised, but in many cases the foliage also. This shows itself especially in the case of the Briar and the valuable hybrids derived from it. Every garden should find room for one of these sturdy Penzance Briars, and I will certainly plant more varieties next autumn. In November I planted two kinds—Anne of Gevestein and Lady Penzance, both of which are already borne dozens of flowers—the former dark crimson, the latter, as one would expect from its ancestry (its parents are Sweet William and Austrian Copper), a beautiful copy-yellow, with stamens of clear gold. These have proved themselves very vigorous, the former as a climber, and the other as a bush, with delicately-scented flowers of great beauty, and with the scented foliage of the Eglantine, which are, I believe, less than twenty varieties, and that a complete collection can easily be obtained and grown. Although but a summer plant, and, therefore, not long in flower, its

foliage will yield sweet odour, and its hips beautiful colour for some months.

It is in their habit of autumnal as well as summer blooming that the Tea Roses are so valuable. The same, of course, applies partially to most of the hybrid perpetuals; but for the most part their blooms are so massive and stiff that their artistic value is not comparable with that of the more loosely-arranged and fragile Teas. The Teas I have found to be the first to flower; and I mean to plant several along a rough trellis I have just erected, in order that I may enjoy these Roses and other plants grown freely and naturally. Three of the best Tea Roses for a beginner to start with are Madame Bérard, Gloire de Dijon, and Belle Lyonnaise, all of which are hardy and vigorous, and all beautiful.

In addition to those Roses I have named, I am especially pleased with *R. spinosissima*, the Burnet Rose, with characteristic bushy habit, and bearing hundreds of fragrant little creamy flowers; *R. Brunonis* and *R. moschata*, two single white Roses with yellow anthers, both vigorous climbers; and the fine white hybrid Moss-rose *Blanche Moreau*.

I referred to the too vigorous growth of the *Silene* which carpeted my Rose border. I was at length obliged to pull it up in its entirety; nor was I too soon, for it had already killed one of my small Teas and a little China Rose-bush. I shall, of course, try another carpet, to avoid the winter and spring bareness, which is the usual property of Rose-borders, but shall use either Primroses which bloom early, or Violas which bloom continually; in any case, however, employing plants of strictly dwarf habit.

I have two really fine masses of colour. The most brilliant is afforded by my *Escholtzias*, now at their extreme of beauty; the other is given by some hundreds of *Bride Gladiolus*, a charming flower much grown in this district for the cut-flower market.

I mentioned the fact that I have just fixed some rough trellis that I may enjoy the free growth of Rose and Clematis, *Choisya* and *Jasmine*, *Ivy* and *Honeysuckle*; and also to afford additional shelter from winds and overlooking eyes. As I cannot do much permanent planting until the autumn I have sown some *Scarlet Runners*, *Nasturtiums*, *Sweet Peas*, and *Canariensis*, that the trellis may be temporarily draped until such time.

This trellis will necessitate, or rather give tempting possibilities of, some new arrangements in my garden scheme; and I have been deriving infinite pleasure from the consulting of catalogues, and the making of lists and plans. What tempting publications the florist's catalogues are! How many million hours have they filled with happiness, cheering the gardener with hopeful dreams and visions of loveliness which he may never realise (or may)? A collection of these catalogues almost constitutes a complete gardening library, and an encyclopædia of present day horticultural science.

When we have Barr's Daffodil catalogue, Backhouse's, Ware's, and Barr's lists of hardy perennials, Kelway's Catalogue of *Pæonies*, *Delphiniums*, and *Gladioli*, Douglas's *Carnation* booklet, Sydenham's lists of *Pansies* and *Violas*, Sutton's "Amateur guide to horticulture," and the general catalogues of Dickson of Chester, Dobbie of Rothesay, Cannell of Swanley, and Smith of Worcester, we are on the fair road to happiness—and an empty pocket. Then again consider the Rose-lists of the Pauls, Bunyard, Rivers, and the rest, and admire the fortitude

of that man who can keep his pen from his cheque-book whilst he has a spare yard in his garden. Now that I have this trellis to plant, and some new beds and borders to arrange for, I consult the catalogues with absurd persistence, and, as it appears to others, childish enthusiastic interest. I take three or four catalogues in the trap when doing my rounds; I prop a catalogue against the cruet and one against the bread at breakfast. I mark, copy, and compare them; I draw up repeated lists, and alter and modify them beyond recognition.

In sober truth, it would be difficult to offer the gardening novice better advice than that given me many years ago by an old friend, Dr. Francis Mead (whose pen, during his short adult residence in England, was often used for the gardening press). I asked him what book he advised me—a gardening ignoramus—to read dealing with open-air flower-gardening, and he gave me this list:—Robinson's *Hardy Flowers*, Sutton's seed catalogue, Barr's catalogues of bulbs and hardy perennials, Ware's set of catalogues, and Smith's and Kelway's general lists.

These catalogues mean great labour and much cost in their production, and they should be carefully preserved. For the most part, they contain accurate descriptions of the plants named, together with an account of their appropriate soils and treatment, as well as numerous illustrations—often artistic productions of considerable value. The illustrations—mainly photographs—which accompany some of the recent catalogues of Barr and Ware, are very far removed from the stiff plain or glaring coloured prints which nurserymen formerly employed. It is unnecessary to say that we should send at least an occasional order in return for the pleasure and profit obtained in this way. It is unnecessary simply because the usual difficulty consists in preventing oneself from ordering the lot.

Among other things which my new arrangements for the autumn include, is a definite bed of good self-coloured Carnations, instead of the rather scattered system of growing them which I have heretofore adopted. It is not advisable to mix Carnations with strong-growing plants, and therefore I intend giving them a bed to themselves. I propose, however, to plant a few dozen clumps of Daffodils among them to brighten the bed in the spring; but as the foliage of the *Carnation* is pleasant all the year, I do not anticipate any bare effect, and the lovely flowers are in any case worth a little sacrifice.

At present the Pinks are acting as the Carnations' forerunners, and very beautiful they are. The old white Pink is not easily to be beaten, either from the point of view of beauty, scent, or sturdy habit. Of the singles, I have been most pleased with the rosy Cheddar Pink, which I have planted on the edge of a dry bank; and the more deeply-coloured alpine Pink, which requires a moister situation. I must not forget another *Dianthus*, now coming into flower, and that is the old and ever admirable and admired Sweet William (what a stupid corruption of the original pretty name "Eillet!"). I have a mass of the strain called *Auricula-eyed*, the flowers of which have white eyes, surrounded by rings of various rich colours. Few plants are easier to grow, or better worth growing. The Spanish Irises have been splendid, the flowers being finer than last year, although the bulbs have not been moved for three years. Now that they can be bought so cheaply, no one need be without this most beautiful of all

ored, if stored it could be called, for the Apples are shot down upon the bare boards of the floor, just as they came from the orchard, there they lay, large and small, sound and unsound, mixed with leaves and broken-off spurs from the trees, and though we had experienced sharp weather, and the snow was still lying on the north sides of the lanes, yet in no way covered or protected.

I waited for my friend to make the first remark, but as he kept silence I asked, "Tell me, please, if this is a fair sample of what you sent up to market?" "Ye-es," he said, "I sent my chaps up with the baskets and a malt shovel (made of wood), and they filled the baskets from the heap, and left it just as you see it, so it must be a fair sample what you see left."—"Then I am not surprised," said I; "you got back only 28 pence, but I wonder you got even so much!" This only elicited a grunt; and at my suggestion we descended the step-ladder, and went to look at the so-called orchards. These were more depressing to look at if possible than the fruit; the trees were planted in rows, but too thickly by half, and seemed to have been left to Nature after they were planted. The branches were crossing and inter-

Feeling therefore there is need, I propose, with the Editor's permission, to write a series of articles on hardy fruits, their varieties, proper culture, and best method of marketing.

By hardy fruits I wish to indicate only such as can be grown without protection of glass or a wall, and the few that can be successfully so cultivated will be found indigenous to Britain, with the exception perhaps of the Breda Apricot, and possibly the Quince, and among Nuts, the Walnut and Chestnut. I propose to divide the subject into three popular divisions, hard fruits, soft fruits, and berries. The first embracing Apples, Pears, and Quinces; the second, Plums, Cherries, and other stone fruits; and the last, Strawberries, Raspberries, Gooseberries, and Currants.

I begin with the Apple, the monarch among fruits, all crowned, but some having as many, and some more crowns than the Pope of Rome, certainly the most important of all, looked at from a food point of view. I have heard an old nurseryman say, "that with flour cheap, and an abundant crop of Apples, the poor cannot starve," but he probably forgot the item of suet, and margarine had not then been invented!

"sharp" cider; one produces a fragrant, limpid drink, another gives a flat and turbid cider. There is, according to the United States Consul at Havre, still another kind of ferment, consisting of an aggregation of microbes, commonly known as "mother of vinegar," which, when introduced into cider transforms it into vinegar.

In selecting the Apples care should be taken, for to make good cider it is above all necessary to have the proper kind of Apples. To sum up the qualities needed to produce good cider, it may be stated that the fruit should be ripe and fragrant, averaging from two to four per thousand of acidity, containing with some mucilage a notable quantity of tannin (3 or 4 per cent.), and a large proportion of saccharine matter, say 15 per cent. In gathering the fruit, care is taken to protect the Apples against mud or other extraneous substances, which, if introduced into the must, retards fermentation, and impairs the quality of the cider. All rotten Apples are rigidly excluded, as it is contended that a few rotten Apples will affect the flavour of the cider. The fruit being carefully selected, the next step is to thoroughly crush it. After crushing the Apples the usual practice is to place the pulp in uncovered vats or tubs, and leave it twelve or fourteen hours before pressing, stirring it meanwhile from time to time with wooden shovels in order to bring the mass into contact with the air.

The modern cider-press consists of a circular cage with a bottom on which the pulp or mashed Apples are placed, and then pressed by means of a screw—at first slowly, then progressively until the operation is completed. When the pulp has been thus drained, it is taken out and placed in vats or tubs, where it is macerated with a certain quantity of water, say two or three gallons of pure soft water to 100 lb. of pulp, for twenty-four hours, after which it is subjected to a second pressure. In this way, from every hundred-weight of pulp, several gallons more of cider are obtained. The expressed juice of fruit, known as the must, having been placed in barrels, the next step is to obtain proper fermentation, the most delicate and troublesome process in the making of cider, and at the same time the most important, since upon it depends the quality of the product. The fermentation of cider differs essentially from that of wine. In the case of wine, all the sugar ought to be completely transformed into alcohol by the ferments or fermentative microbes, which play such an important part in this process. For cider, on the contrary, it is necessary that fermentation be promptly established, and last only a short time, in order that the must may be clarified before the sugar has been entirely transformed into alcohol. The sugar which remains after the first active fermentation will still maintain a slow fermentation in the cider, which prevents it from becoming too acid and being transformed into vinegar. There are three conditions which largely influence fermentation, viz., temperature, aeration, and the acidity of the crude juice. Temperature plays an important rôle in the process of fermentation. At 32° Fahrenheit fermentative germs cease to multiply and become inactive; at a temperature of 130° to 140° many of them die. It is between 68° and 78° that they are most active. If therefore the temperature is too low, it will be necessary to warm the must in order to accelerate fermentation. This is done by heating a small quantity of the fluid to about 135° or 140° Fahrenheit, and then pouring it into the barrel. In France a specially-constructed warming apparatus (*chauffe-cure*) is used for this purpose. As regards aeration, oxygen is an essential element in the process of fermentation, and it is therefore necessary that the must be thoroughly aerated. The liquid is stirred from time to time, and a quantity drawn off now and then and returned to the barrel; the bung-hole is left open or stopped with a little cotton-wool, which admits the air, and at the same time excludes any injurious microbes that might find their way into the barrel. In spite of all precautions, it sometimes happens that fermentation is retarded. This is the case when too many sour Apples have been used, the result being an acid must. Some persons neutralise the acidity by throwing a handful of wood-ashes into the liquid, and then agitating it; but the best makers think this manner of treating the must is apt to produce a flat cider without colour, and is, therefore, not to be recommended. They say it is better to avoid an excess of acidity by a proper choice of fruit. One means of increasing fermentation, much used by the French cider-makers, is to add a small quantity of must made from the best Apples, to the indifferent must, which acts as a leaven to produce fermentation. The ferments of good fruit, thus added, set immediately to work and multiply the fermentation germs



FIG. 7.—BOTANIC GARDEN, YORKSHIRE COLLEGE LEEDS. (SEE P. 24.)

lacing, more like those of a primeval forest than a cultivated plantation, while the branches were covered with moss and lichen.

To my enquiry "How often are the trees pruned?" I got this answer, "Oh, when my chaps can't do anything else I send them here with an axe, and they chop out the dead branches; but I didn't know they wanted any other pruning!" "My dear sir," said I, "the orchards and plantations in Kent are pruned and attended to by a skilled workman every winter; for it is only by allowing light and air to get to your trees that they will become early fruitful, and produce such samples of fruit that your salesman will accept them and remit you a fair price." "What must I do, then?" "My advice," I returned, "is to cut at least 100 large faggots or more out of each orchard, mostly from the middle of the trees" (I should like to have said fell every other tree, but dared not), "lime-white the trunks and thick branches, and next year (this was late in November) you may, perhaps, grow a little good fruit." I left my friend looking very downcast, and did not see his jovial face again at any of the lectures, and I have grave doubts whether my advice-gratis was put into practice; and although his good wife had prepared a luncheon for me, I had given such offence by my "straight tips," that I was not even asked to partake of the hospitality.

while probably he not even dreamt, though he had exported scores of trees there, of ship-loads of fine Apples coming from the Antipodes and from North America, so that there is now no perceptible interval between the last of our late Apples and our earliest into the markets, not fully bridged over by fine fruit from abroad. *Experience.*

CIDER-MAKING IN FRANCE.

It may be well to state, before describing the several processes of cider-making, that the quality of the cider will depend to a great extent upon the proper fermentation of the must or crude juice of the Apple. So fully is this recognised that it has given rise to the French proverb, "No good cider without good fermentation and good ferments." Several days after the must is placed in barrels, a sort of ebullition is produced in the mass, bubbles of carbonic acid are disengaged, foam or froth rises to the surface, and the lees or dregs of the juice settle to the bottom; finally, the must loses its sweet taste, the sugar which is contained being converted into alcohol. This disturbance or transformation is produced by microbes, which, seen under the microscope, have the appearance of small cells. These are the ferments. There are different kinds of ferments, as there are different kinds of Apples. One will produce a sweet cider, another a dry or

so rapidly, that the deficiency in the must to which it has been added is soon overcome, and a fresh and complete fermentation takes place. In like manner, a good cider may be destroyed by the addition of a bad ferment, often unwittingly added, by not taking care to thoroughly clean the instruments and vessels employed in the fabrication of the cider. In France, an artificial leaven, made from Apples of the best growth, is an article of commerce, and is much used to correct deficiencies in must of a poor quality. A quart of this leaven, costing about 4s., will serve to improve from 130 to 140 gallons of an indifferent must. This leaven, or artificial ferment, has been used with very satisfactory results for several years, and is apparently growing in favour with large cider-makers. After ten or fifteen days the fermentation ceases; a densimeter introduced into the cider shows its specific gravity to be from 10.15 to 10.20; the liquor has become clear, the grosser lees settling to the bottom, and the lighter rising to the surface, so that the cider is, as it were, between two layers of lees. This is the time to draw it off. The cider having been drawn off into a clean barrel, undergoes, after a certain time, a second fermentation, very much less energetic than the first. When this second fermentation becomes feeble, and carbonic acid is no longer disengaged, the barrel is completely closed until the time arrives for using the cider, when it is again drawn off by a spigot or faucet. Cider is preserved well enough in barrels when completely full, but when the barrel has been partly emptied, there is danger of its degenerating in quality. This is so well understood in France, that when a certain quantity of the cider has been drawn off, the remainder is protected by what is known as "Noel's Protector," much the same as a simple covering or thin layer of oil, which excludes the air, and prevents the entrance of noxious microbes which would soon transform the cider into vinegar. Bottling cider has become a large industry in France. Good cider in bottles ought to be clear and sparkling, and when properly prepared is a popular table drink, not only on account of its pleasant and refreshing taste, but for the more important reason that cider is now regarded in France as the most hygienic of all drinks, much more, indeed, than the best of wines. Condensed from the "*Journal of the Society of Arts*."

NOTICES OF BOOKS.

LESSONS WITH PLANTS, ETC. By L. H. Bailey (Macmillan & Co.)

THE sub-title of this little volume is entitled "Suggestions for seeing and interpreting some of the Common Forms of Vegetation." We may imagine the teacher with his blackboard and his Apple-twig, and each pupil provided with similar twigs. The appearances of the twig are pointed out, and the inferences that may be drawn from them explained. The pupil is thus first of all made to see, and then to reflect on what he has seen. Next day another twig is taken, less assistance is given by the teacher, but the pupil is as before encouraged to see for himself, and to compare what he now sees with what he has seen before; and so with the flowers and the fruits. This is an excellent way of teaching botany, or, indeed, any other natural science: the system is invaluable to the future botanist; it is of the highest service as a mental discipline to anyone, whatever his future destiny may be.

The illustrations chosen from buds of various natures, and at various stages of growth, would form an excellent preparation for young gardeners. Indeed, the whole book abounds in suggestive statements, the subject is treated with welcome freshness, and it is copiously illustrated with original illustrations. The book is provided with index and glossary.

THE CALIFORNIA VEGETABLES IN GARDEN AND FIELD, by E. J. Wicksen, A.M.; Pacific Rural Press, San Francisco. (London: Gay & Bird.)

"EXPERIENCED gardeners from other states and countries soon find that their accustomed procedure fails of its wonted results: that the old times and ways of doing things are unsuitable, and that new rules of practice must be learned." This sentence explains the purport of a book which is further

entitled, "a manual of practice with and without irrigation, for semi-tropical countries." The subject, we are told, is "appalling in its intricacy," conditions of soil and climate in California being varied to the last degree, whilst practice must vary with them. However different the conditions, the principles must be the same. It is impossible to teach "practice" in the college class-room; that must come from experience, but the principles that govern practice are best taught in the laboratory and class-room, and some hints as to their application in the trial ground and experimental station.

Market-gardening in California has had its vicissitudes; it did not at first accord with the adventurous spirit of the day. Small growers near the cities, we are told, did well, but there was not dash enough about market-gardening for Americans, who, consequently, allowed the business to pass into the hands of Chinese or other emigrants. Great enterprises in live-stock, Wheat, wool, and fruit afforded opportunities more to the American taste than vegetable-growing. The American settler had incomparably more energy and industrial ambition than his predecessors the Mexicans, but he shared with them a liking for doing his work in the saddle, or on the seat of a riding-plough, cultivator, or harvester. Hence, it has happened that the competition which the American grower has to encounter is depressing and discouraging; but yet, says the author, the situation is not at all hopeless. "The foreigners are not, as a rule, progressive. They are frugal and industrious to an extreme, and they undertake to please their customers with variety as well as low prices . . . but it is quite easy to surpass them in quality by constant effort for improved varieties which they are slow to introduce, and to cheapen production by the use of horse-labour and improved tools, while they plod along with hand methods and appliances." The successive chapters of this book are devoted to generalities concerning climate, soil, irrigation, manures, and then to a discussion of the appropriate methods of cultivation of vegetables in alphabetical order, from Asparagus to Turnips.

In some districts cultivation and supply are continuous throughout the year, as in the case of Beet, for instance, which can be sown at any time, and taken from the ground every day in the year, as can also Lettuce and Spinach, seasons being thus practically unknown. In the mountains, of course, the conditions are different, and the practice resembles that of temperate and cold climates generally. In the case of Aubergines, which are much grown in California, we are seriously told "that it is not unusual to find at California fairs specimens of 6 lb. weight, while fruit of 2 and 3 lb. constitute common stock with the vegetable peddlers!" It must be remembered that the author is not speaking of Pumpkins but of Aubergines. When he comes to Pumpkins, or Squashes, weights of 300 pounds! are mentioned. One farmer, whose truth and probity are vouched for by personal knowledge, had ten Squashes, the aggregate weight of which was 1 ton and 50 pounds. The largest of these weighed singly 225 pounds. From another, which weighed 210 pounds, the seeds were removed, "my boy (aged 16) then got into it, and I put the pieces together and completely closed him in. I then persuaded my 18-year-old daughter to get into it, and I closed her in, in the same manner. My daughter's weight was 110 pounds. I then put two 7-year-old boys in at once. I then put my three little girls in at once; they were aged respectively 6, 4, and 2 years, their united weights being 116 pounds. . . . The Squash was 3 feet 4 or 5 inches in length." The reader will please note, that we hold ourselves only responsible for the correctness of our copy!

Turnips and Kohl Rabi are not in favour, as they do not endure heat and drought, and are much subject to fungus. Happily the stock-feeder has many other more serviceable crops.

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and flower-seeds, especially Sweet Peas. Among the remedies proposed for insects is one which might be tried with advantage; viz., kerosene-powder, made by stirring a tablespoonful of the oil with a quart of pulverised gypsum or air-slaked lime.

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Even "fossil wisdom," as Mr. Inwards calls it, embodied in these old traditions, makes amusing reading; and so also do the quotations about birds, beasts, reptiles, and plants as weather-prophets.

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Great additions have of late been made to the glass-houses, and Mr. Lawrenson informed me that he will shortly erect a number of others. *Visitor.*

PASSION-FLOWER COMING ON A TENDRIL.

THE tendrils of Passion-flowers are considered to be abortive flower-stalks (see Masters in *Flora Brasiliensis* "Passifloraceæ"). That this view is correct is shown by the occasional presence of flowers on the tendrils, as shown in fig. 8.

EDINBURGH SCHOOL OF RURAL ECONOMY.

THE prospectus of the Edinburgh School of Rural Economy for the Session 1898-99 has now been issued. These classes have met with great success, and have been highly appreciated. In each of the last three years over 200 students attended the classes.

The courses of instruction arranged for the Session 1898-99 are similar to those of last year. Their main features are:—

1. A Two Years' Curriculum of Day Classes in Agriculture and allied Sciences.
2. A course of Day Lectures on Forestry in the University.
3. An extensive series of Evening Classes on Agriculture and allied Sciences, embracing Horticulture and Forestry; and
4. The usual Summer Vacation Classes for Schoolmasters, which have been well attended.
5. A Month's Course for Farmers and Farmers' Sons.

The month's course for farmers and farmers' sons and others who cannot spare time for a longer course is a new feature. This course will be held in the month of December, when there is a lull in farm-work, and the instruction provided is of an eminently practical character. It embraces lectures on Soils, Manures and their Uses, Food and Feeding; on the Elementary Chemistry of the Farm, Veterinary Hygiene, and Insect Pests, while practical instruction in joinery work is also to be given.

The day classes extend over two Sessions, each beginning in October and ending in March. It is expected that those entering for these classes will have previously completed a good general school training.

The work of the First Session, embracing Mensuration, Mechanics, Elementary Physics and Chemistry, Botany, Book-keeping, Drawing, and Handicraft, practically completes the preliminary education of the student, and gives him an adequate knowledge of the elements of the sciences that have a direct bearing on agriculture. At the same time his interest in the practical aspect of his work is maintained by such class exercises as those in measuring buildings and fields, in making drawings of these on scale, in woodwork, and in the application of physics in agriculture.

The subjects of study in the Second Session are Agriculture; Agricultural Chemistry, Botany,

Zoology, and Entomology; Veterinary Science and Forestry.

The complete course thus aims at fitting a young man to enter with intelligence into his work as a farmer, a gardener, or a forester. It should enable him to understand the greater part of the work that he will see in practice, and to study for himself any special subject that he may afterwards find to be of importance to him. A student who has satisfactorily completed the two years' course of study, and who has had the required experience of practical work on the farm or in the forest, should find himself sufficiently prepared for the examination for the Diploma of the Highland and Agricultural Society.

Numerous and varied evening classes are provided for those who are otherwise engaged during the day.

A specially moderate scale of fees has been arranged. This will be indicated by the fact that the inclusive fee for the First Year's entire Course in Agriculture is five guineas.

Copies of the Syllabus are to be had from the Secretary, 3, George IV. Bridge, Edinburgh.



FIG. 8.—TENDRIL OF PASSION-FLOWER BEARING A FLOWER.

FOREIGN CORRESPONDENCE.

THE WELWITSCHIA COUNTRY.

I FEEL sure that some remarks about *Welwitschia mirabilis* will interest many of your readers. Three weeks ago I arrived here, coming over Spitzkopjes from Swakopmund to Salem, a place situated on the left border of the Tsoachaub (Swakop), a hundred kilometres eastwards from Swakopmund. I was impressed by the wonderful and luxuriant vegetation of the broad and low borders of that river, the most beautiful tree being the Ana-tree (*Acacia albida*), now covered with ripe curled mealy pods, of which oxen and goats are very fond. Many trees that I measured are 5 to 7 metres in circumference 5 feet above the soil, and 20 metres in height. It is a pity that the wood is perfectly useless as timber, as it is soft, like Poplar-wood, and rots very soon in the soil. Of other trees there are growing, mixed with *Acacia albida*, *A. Giraffæ*, several fine specimens of a species of *Ficus*, with edible Peach-red fruits, and *Tamarix austro-africana*. In Salem there grows also a solitary *Acacia horrida*, which is so common in the whole

Namaland, and a few steps from my small house, an old mission-station, a Date-palm planted long ago by the old missionary, Mr. Böhm, residing now in Walfish-bay. *Euclea pseud-ebenum* (Ebony tree) grows only in the dry tributaries of the Tsoachaub.

The plants of the black alluvial deposits of the Tsoachaub are among many others, a beautiful yellow-flowered *Codon*, *Cardiospermum* (*Halicacabum*?), the perennial *Cucumis ecirrhosus* (a Water-Melon, with very small elegant foliage, and bitter, yellow fruits of the size of a small Melon); the common *Cucumis Citrullus* (Water-Melon), but excessively bitter, four other kinds of *Cucurbitaceæ*, three kinds of *Cleome*, a wonderful suffrutescent *Digitalis*, 1½ foot high, with flowers like those of *Digitalis purpurea*; three *Pedalinæ*, one of them 8 to 10 feet high, with long white flowers; two *Heliotropiums*, a frutescent, red-flowering *Gossypium*, a *Gomphocarpus*, a *Celosia*, four *Cyperus*, two *Achyranthes*, two splendid *Sida*, 8 to 12 feet high, a *Lythrum*, a *Lentibularia*, three *Tribulus*, and a host of other things, which I do not know at all. Of introduced weeds there are *Ricinus communis* (forming real trees), *Nicotiana glauca*, *Portulaca oleracea*, *Veronica Anagallis*, *Chenopodium botrys*, *Polygonum persicaria*, and *Arundo Donax*.

Living only sixty kilometres distance from the locus classicus of the *Welwitschia*, I decided one day to go down to that famous place in order to collect flowers, or if possible ripe seeds of that vegetable wonder. Haillgamchab, the name of the place in question, is situated on the left border of the Tsoachaub, which crosses the Namieb or desert from east to west. Going down from the yellow sandy and hilly plain to the police station, which is situated under the Ana-trees of the Tsoachaub, I very soon found the first female specimen of *Welwitschia*. For eventual reproduction I send you an inflorescence of this as well as a male one, of which I found an enormous specimen not far from the former. Among all the hundreds of plants that I found afterwards, I discovered not a single seedling which I could dig out in order to replant it at Salem. There are specimens with leaves 3 metres long and 2 feet broad, others which have divided themselves into two, three, or four heads. Not a single plant shows entire leaves, most of them are dry from the top as far as the middle, and all are lacerated longitudinally. Whether the fresh leaf is acuminate or obtuse, I cannot tell. Even in places where nobody has ever seen them the leaves are likewise lobed.

The old cones of last year, of which I collected a great number, contained only imperfect or empty seeds. In a few weeks the seeds will be ripe, and then I shall go down again to Haillgamchab to collect as many as possible of them for distribution among botanical institutes. *Welwitschia* seems to require more water than is generally believed, as its roots sink very deep into the crevices of the granitic rocks, as well as into loose deep granitic sand, where there is some moisture almost during the whole year. I think it will succeed in a Cape—or succulent-house—like those at Kew, or in such a situation as Comm. Hanbury's garden at La Mortola, or the gardens between Mentone and Nizza.

Before I saw the *Welwitschia* in its home I supposed that it lived in places that are perfectly uninhabitable by other plants. This opinion I must state is an error. I found in its company plants that are scattered almost over the whole country, as *Cleome*, *Acacia Giraffæ*, two *Zygophyllums*, two *Papilionaceæ*, several *Acanthaceæ*, *Aristida*, and others. As it very seldom rains in the Namieb (often not for several years), it is not astonishing that I could not find seedlings of *Welwitschia*. The seeds require, I suppose, at least one heavy rain for their germination; the dew can hardly be sufficient for this process. *K. Dinter.*

JUNIPERUS SINENSIS.

THIS is a form of a species of *Juniperus* in Messrs. Sanders' establishment, like *japonica*, in which the primordial leaves alone are present; though the shrub has attained a considerable size, no trace of the true foliage has as yet appeared. The leaves are in four regular ranks

so rapidly, that the deficiency in the must to which it has been added is soon overcome, and a fresh and complete fermentation takes place. In like manner, a good cider may be destroyed by the addition of a bad ferment, often unwittingly added, by not taking care to thoroughly clean the instruments and vessels employed in the fabrication of the cider. In France, an artificial leaven, made from Apples of the best growth, is an article of commerce, and is much used to correct deficiencies in must of a poor quality. A quart of this leaven, costing about 4s., will serve to improve from 130 to 140 gallons of an indifferent must. This leaven, or artificial ferment, has been used with very satisfactory results for several years, and is apparently growing in favour with large cider-makers. After ten or fifteen days the fermentation ceases; a densimeter introduced into the cider shows its specific gravity to be from 10.15 to 10.20; the liquor has become clear, the grosser lees settling to the bottom, and the lighter rising to the surface, so that the cider is, as it were, between two layers of lees. This is the time to draw it off. The cider having been drawn off into a clean barrel, undergoes, after a certain time, a second fermentation, very much less energetic than the first. When this second fermentation becomes feeble, and carbonic acid is no longer disengaged, the barrel is completely closed until the time arrives for using the cider, when it is again drawn off by a spigot or faucet. Cider is preserved well enough in barrels when completely full, but when the barrel has been partly emptied, there is danger of its degenerating in quality. This is so well understood in France, that when a certain quantity of the cider has been drawn off, the remainder is protected by what is known as "Noel's Protector," much the same as a simple covering or thin layer of oil, which excludes the air, and prevents the entrance of noxious microbes which would soon transform the cider into vinegar. Bottling cider has become a large industry in France. Good cider in bottles ought to be clear and sparkling, and when properly prepared is a popular table drink, not only on account of its pleasant and refreshing taste, but for the more important reason that cider is now regarded in France as the most hygienic of all drinks, much more, indeed, than the best of wines. *Condensed from the "Journal of the Society of Arts."*

NOTICES OF BOOKS.

LESSONS WITH PLANTS, ETC. By L. H. Bailey (Macmillan & Co.)

THE sub-title of this little volume is entitled "Suggestions for seeing and interpreting some of the Common Forms of Vegetation." We may imagine the teacher with his blackboard and his Apple-twig, and each pupil provided with similar twigs. The appearances of the twig are pointed out, and the inferences that may be drawn from them explained. The pupil is thus first of all made to see, and then to reflect on what he has seen. Next day another twig is taken, less assistance is given by the teacher, but the pupil is as before encouraged to see for himself, and to compare what he now sees with what he has seen before; and so with the flowers and the fruits. This is an excellent way of teaching botany, or, indeed, any other natural science: the system is invaluable to the future botanist; it is of the highest service as a mental discipline to anyone, whatever his future destiny may be.

The illustrations chosen from buds of various natures, and at various stages of growth, would form an excellent preparation for young gardeners. Indeed, the whole book abounds in suggestive statements, the subject is treated with welcome freshness, and it is copiously illustrated with original illustrations. The book is provided with index and glossary.

THE CALIFORNIA VEGETABLES IN GARDEN AND FIELD, by E. J. Wicksen, A.M.; Pacific Rural Press, San Francisco. (London: Gay & Bird.)

"EXPERIENCED gardeners from other states and countries soon find that their accustomed procedure fails of its wonted results: that the old times and ways of doing things are unsuitable, and that new rules of practice must be learned." This sentence explains the purport of a book which is further

entitled, "a manual of practice with and without irrigation, for semi-tropical countries." The subject, we are told, is "appalling in its intricacy," conditions of soil and climate in California being varied to the last degree, whilst practice must vary with them. However different the conditions, the principles must be the same. It is impossible to teach "practice" in the college class-room; that must come from experience, but the principles that govern practice are best taught in the laboratory and class-room, and some hints as to their application in the trial ground and experimental station.

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FOREIGN CORRESPONDENCE.

THE WELWITSCHIA COUNTRY.

I FEEL sure that some remarks about *Welwitschia mirabilis* will interest many of your readers. Three weeks ago I arrived here, coming over Spitzkopjes from Swakopmund to Salem, a place situated on the left border of the Tsoachaub (Swakop), a hundred kilometres eastwards from Swakopmund. I was impressed by the wonderful and luxuriant vegetation of the broad and low borders of that river, the most beautiful tree being the Ana-tree (*Acacia albida*), now covered with ripe curled mealy pods, of which oxen and goats are very fond. Many trees that I measured are 5 to 7 metres in circumference 5 feet above the soil, and 20 metres in height. It is a pity that the wood is perfectly useless as timber, as it is soft, like Poplar-wood, and rots very soon in the soil. Of other trees there are growing, mixed with *Acacia albida*, *A. Giraffæ*, several fine specimens of a species of *Ficus*, with edible Peach-red fruits, and *Tamarix austro-africana*. In Salem there grows also a solitary *Acacia horrida*, which is so common in the whole

Namaland, and a few steps from my small house, an old mission-station, a Date-palm planted long ago by the old missionary, Mr. Böhm, residing now in Walfish-bay. *Euclea pseud-ebenum* (Ebony tree) grows only in the dry tributaries of the Tsoachaub.

The plants of the black alluvial deposits of the Tsoachaub are among many others, a beautiful yellow-flowered *Codon*, *Cardiospermum* (*Halicacabum*?), the perennial *Cucumis ecirrhosus* (a Water-Melon, with very small elegant foliage, and bitter, yellow fruits of the size of a small Melon); the common *Cucumis Citrullus* (Water-Melon), but excessively bitter, four other kinds of *Cucurbitaceæ*, three kinds of *Cleome*, a wonderful suffrutescent *Digitalis*, 1½ foot high, with flowers like those of *Digitalis purpurea*; three *Pedaliaceæ*, one of them 8 to 10 feet high, with long white flowers; two *Heliotropiums*, a frutescent, red-flowering *Gossypium*, a *Gomphocarpus*, a *Celosia*, four *Cyperus*, two *Achyranthes*, two splendid *Sida*, 8 to 12 feet high, a *Lythrum*, a *Lentibularia*, three *Tribulus*, and a host of other things, which I do not know at all. Of introduced weeds there are *Ricinus communis* (forming real trees), *Nicotiana glauca*, *Portulaca oleracea*, *Veronica Anagallis*, *Chenopodium botrys*, *Polygonum persicaria*, and *Arundo Donax*.

Living only sixty kilometres distance from the locus classicus of the *Welwitschia*, I decided one day to go down to that famous place in order to collect flowers, or if possible ripe seeds of that vegetable wonder. Haillgamchab, the name of the place in question, is situated on the left border of the Tsoachaub, which crosses the Namieb or desert from east to west. Going down from the yellow sandy and hilly plain to the police station, which is situated under the Ana-trees of the Tsoachaub, I very soon found the first female specimen of *Welwitschia*. For eventual reproduction I send you an inflorescence of this as well as a male one, of which I found an enormous specimen not far from the former. Among all the hundreds of plants that I found afterwards, I discovered not a single seedling which I could dig out in order to replant it at Salem. There are specimens with leaves 3 metres long and 2 feet broad, others which have divided themselves into two, three, or four heads. Not a single plant shows entire leaves, most of them are dry from the top as far as the middle, and all are lacerated longitudinally. Whether the fresh leaf is acuminate or obtuse, I cannot tell. Even in places where nobody has ever seen them the leaves are likewise lobed.

The old cones of last year, of which I collected a great number, contained only imperfect or empty seeds. In a few weeks the seeds will be ripe, and then I shall go down again to Haillgamchab to collect as many as possible of them for distribution among botanical institutes. *Welwitschia* seems to require more water than is generally believed, as its roots sink very deep into the crevices of the granitic rocks, as well as into loose deep granitic sand, where there is some moisture almost during the whole year. I think it will succeed in a Cape—or succulent-house—like those at Kew, or in such a situation as Comm. Hanbury's garden at La Mortola, or the gardens between Mentone and Nizza.

Before I saw the *Welwitschia* in its home I supposed that it lived in places that are perfectly uninhabitable by other plants. This opinion I must state is an error. I found in its company plants that are scattered almost over the whole country, as *Cleome*, *Acacia Giraffæ*, two *Zygophyllums*, two *Papilionaceæ*, several *Acanthaceæ*, *Aristida*, and others. As it very seldom rains in the Namieb (often not for several years), it is not astonishing that I could not find seedlings of *Welwitschia*. The seeds require, I suppose, at least one heavy rain for their germination; the dew can hardly be sufficient for this process. *K. Dinter.*

JUNIPERUS SINENSIS.

This is a form of a species of *Juniperus* in Messrs. Saunders' establishment, like *japovica*, in which the primordial leaves alone are present; though the shrub has attained a considerable size, no trace of the true foliage has as yet appeared. The leaves are in four regular ranks

each leaf linear oblong, somewhat acute, 5—6 mill. long, of a beautiful glaucous blue on the upper surface.

In its present state it is highly ornamental, and has a strong juniperine odour.

NOTES FROM THE NETHERLANDS.

At the Botanical-Zoological Garden at The Hague, I noted a *Kleinia repens* (*Senecio repens*) from the Cape, with pauciflorous capitules in corymbs, and which florists should cultivate and use more generally; the free-flowering *Fuchsia* Mme. Rundler covered the side of a greenhouse with bloom; *Tacsonia Van Volxemi*, a hundred choice varieties of *Caladium*, *Cymbidium Lowi*, with thirty floral racemes from 3 to nearly 5 feet long; and other choice plants. I also admired a fine collection of *Vanda*, including choice and well-cultivated varieties, probably unique in any public garden.

In the Leyden Botanic Garden, *Caladiums* are grown thus: they are at first kept in full sunshine, then with the plants in water in full sun, and in the Victoria-house; the results, M. Ern. Th. Witte reports, are very satisfactory. *Lilium giganteum* succeeds well here in the shade; *Crinum Powellii*, intermedium, and album are hardy species, needing only to be covered in winter with a layer of grassy turf 1½ foot thick, which protects them from frost and damp, so that the plants grow vigorously and bloom freely; *Hesperis violacea* is an admirable plant, because of its long spikes of clear violet flowers, veined with reddish-violet; *Viburnum tomentosum plicatum* at the time of flowering becomes one large cluster of pure white; *Iris virginica* is an old but good plant, the flowers of which open well in water.

At Leyden, *Amaryllis* are a specialty. Bulbs in pots had been, on June 6, a fortnight under glass; when the shoots are 4 inches high, the glass will be removed, cultivation continued in the open-air, and at the end of July the plants will bloom.

At the Utrecht Botanic Garden I observed *Dendrobium macrophyllum Veitchianum*, a good Pansy, *Vanda tricolor* Thomas Glynn, lilac, and sweetly scented; *Calceolaria violacea*, a fruiting species from Chili, with charming and abundant little flowers; *Passiflora cœrulea*, *Impératrice Eugénie*, and *Aristolochia elegans* with thousands of flowers.

MM. Glym Davos et Cie., in addition to some fine Orchids, showed me *Pteris scaberula*, *Erythræa edulis*, a rare Palm; and a fine variegated Palm, *Chamærops excelsa* var., somewhat suggestive of *Tillandsia tessellata*.

At Maertensdyk-lez-Utrecht are the houses of Baron von Boetzelaar, a well-known Orchid-grower. Here were *Odontoglossum crispum*, *O. luteo-purpureum*, with a branching spike with sixty good flowers; *Cattleya Mendeli*, some good *Vandas*, *Cypripediums*, and fine specimens of *Oncidium sphacellatum*.

On June 8 there was held, at Amsterdam, a meeting of a plant and floral committee of the Horticultural and Botanical Society of the Netherlands. Mr. E. H. Krelage staged *Acalypha Sanderiana*, *Richardia africana* candidissima, *Iris nigricans*, *Tulipa Sprengeri*, *Calochortus Purdyi*, *mameanus roseus* and majus, *Brodiaea Howelli* lilacina, *Kniphofia Tucki*, and other plants. The same firm also showed a fine group, including *Iris sibirica*, *equalens*, *orientalis*, *plicata*, and *Dodecatheon*; *Helicodicera cristata*, *Pyrethrum Trollius Gibsoni*, *Sprekelia formosissima* and glauca, *Papaver*, *Oxalis*, and many other plants, a Gold Medal being awarded for the lot.

M. Schrober, of Utrecht, showed forced perpetual Strawberries of delicate scent, but somewhat watery flavour. Baron von Boetzelaar sent a fine *Odontoglossum crispum*, the divisions much spotted with brownish-red, of good form and large size; also another plant with pure white flowers, and a third, of the *Triana* group, also fine.

M. J. H. Tromp Meenters, of Stremoyk, in a group of Orchids showed a well-bloomed *Cattleya Skinneri*, with three clusters of large dark flowers; *Cymbidium*

Lowi with a dozen floral racemes; a strong plant of *Anguloa Clowesii*, and a fine *Cattleya Mendeli*.

M. S. Blecker, Director of the School of Horticulture, and G. A. van Swieten, of Frederiksoord, showed *Begonias* Tappich Königin and Louise de Vries, the former dwarf, free-flowering, easily budded, and a substitute for *Alternanthera paroxchoides*; the latter plant is from a semi-double Tuberous *Begonia* crossed with *B. Weltonensis*; this blooms from April to November, grows 2½ feet high, is easily budded, and should prove very useful.

MM. J. H. Kershen & Cie., of Heemstede, showed *Anemone coronaria*, fl.-pl., White Lady; M. J. C. de Langi, *Lilium rubellum*; M. Willink van Collen, *Lupinus nutkænsis*; MM. Peter van Velsen & Fils, of Overveen, some fine seedlings of *Anemone* St. Brigid; and M. B. Ruys, *Heuchera sanguinea alba*, which I thought an improvement on the type. *Ch. De B.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERRARD, Eastwell Park, Ashford.

Calendula officinalis fl.-pl. Meteor and Orange King, &c. *pluvialis*.—These are among the showiest and most effective of summer flowering annuals, useful alike for filling beds, planting in borders, or wherever masses of bright colour are desired. The height of the plants varies from 9 inches to 1 foot. The colours of the flowers range from a rich orange, and a deep lemon, and that of the last-named is white; beds of these varieties, planted alternately, have a striking effect. The plants grow with rapidity, and flowers freely, and the greater the better the soil.

Polyanthus and *Frimroses*.—If seeds of these plants were not sown in the spring, it is still a good time to sow either out-of-doors in a shaded spot, and cover the seed with some fine soil, or, what is preferable, in pots or boxes, placing these upon a bed of coal-ashes in a cold frame facing north. By the first mode of sowing, the seed is more likely to be unmolested, and in the second the young plants are more likely to be better cared for. The pans and boxes should be well drained, and the crocks covered with moss or rough leaf-mould, and the soil should consist of three-fourths leaf-mould and one-fourth loam, and a small quantity of sharp sand well mixed with it. If the soil is very dry, afford water, and wait an hour or two before sowing the seeds. Cover the seed very slightly with fine soil, and be sure that slugs do not molest them. When large enough to handle, let them be pricked out upon a partially shaded bed, and with the exception of an occasional application of water in dry weather, and keeping the ground free from weeds, they will need but little more attention until the autumn, when they may be planted in the places in which they are intended to flower.

Sweet Pea Pink Cupid.—This so far has proved, here, to be very superior to the white variety of that name; the flowers are of two shades of pink; and the height of the plants varies from 3 to 6 inches, with a breadth of about 1 foot, and the flowers are very numerous.

The Flower-beds.—The flowers are feeling the beneficial effects of the warmer weather, and rapidly covering the soil, and whilst their size permits of it being performed without damaging them, the soil should be stirred with the small single-handled hoe or handfork. *Calceolarias* should be supported by neat Birch twigs stuck in among the plants; and *Pelargoniums*, *Petunias*, &c., secured with pegs. If the ground is dry, afford copious applications of water either in the early morning or late in the day. *Violas* should be especially attended to in this respect, and the seed-vessels removed from the plants. The more tender sub-tropicals should now be in their places, taking care to make them secure against the wind if they are tall.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Cypripediums.—Those plants of *Cypripedium bellatulum*, *C. concolor*, *C. Godefroyæ*, and *C. niveum* which have just gone out of the flower-stage may be repotted, not disturbing them unnecessarily at the

root in the least degree, as the work needs the utmost care, the roots being very brittle. Healthy plants, if in pots of a suitable size, should have the whole of the old compost removed by picking it out of the drainage rearranged, and fresh rooting material afforded. Thriving specimens that require more space should have the old pot broken with a hammer and the decayed compost picked out without disturbing the roots, and if the drainage be permeated with roots, leave it untouched, and place the whole mass in a larger pot, filling up to about one-half depth with crocks, limestone, or broken bricks, and fill up firmly with the following compost:—G. fibrous loam, freely intermixed with small nodules of tufa-rock, and a small quantity of sphagnum-moss. Be sure to keep the rootstock about on a level with the rim of the pot, and the potting material about ½ in. below, which will render the affording of water a easy matter. Instead of affording water in the usual manner, it is much safer to dip *Cypripediums* in a pail of water, letting it just cover the surface of the compost. With this method there is little danger of water lodging in the centre of the plants or in the axils of the leaves. Throughout the growing season these plants require a good soaking each time they become dry, and all of them prefer the hot, moist condition usual in the East Indian-house, and a light position where they may be only thinly shaded at midday. Thrips damage the young foliage, and should be frequently sought after; but where the X.L.A. vaporiser is used periodically there will be little need to do this.

Cattleyas.—The weather this season has suited the requirements of *Cattleya gigas* and its free-flowering variety, *C. g. Sanderiana*, and any plant now showing flower should be placed in a shady part of the house, and kept more than ordinarily moist, in order that the growths may finish up well. Immediately the spikes are removed, only just enough water should be afforded as will save the roots from perishing. About a week or ten days afterwards the newly-made growths send out from their bases a great many roots—in fact, this *Cattleya* produces more roots after the flowering period than at any other season. This appearance of roots indicates the time for repotting, which if performed later may bring about a good deal of injury to the roots. In repotting supply ample drainage, elevate the plant somewhat above the rim of the pot, keeping it firm in its position by means of a few neat sticks, and pot with moderate firmness, using a compost that consists of two-thirds best fibry peat, and one-third of sphagnum-moss, broken crocks, and charcoal. After repotting, stand the plants at the cooler part of the *Cattleya* or intermediate-house, where there is sufficient light and air to consolidate the newly-made growth. Water must not be afforded very copiously, or the plants will make growth instead of resting; still, the compost must not become so dry as to cause shrivelling of the bulbs—a condition that causes no harm when the plants have become firmly rooted in the new compost. *Cattleya Dowiana* and its variety, if strong, will at this season be showing the flower-sheath, needing much care in keeping water from lodging around the bases of these sheaths, causing the decay of the flower-buds. This species does best when it is grown at the lightest and best ventilated part of the house. After the flowers have faded the same kind of treatment should be afforded as that advised for *C. gigas*. It is immaterial whether the plant be grown in a pan or a basket, but it is important that the potting material should be of a very porous nature. *C. Eldorado* and its varieties are mid-way through the growing season, and need warm, shady place, and in the case of well-rooted plants to be copiously afforded water till growth for the season is complete. *C. Eldorado* is the most worth growing, for the reason that the flowers appear at a time when but few Orchids are in bloom. Among other *Cattleyas* that require re-potting at this season are *C. Mendeli*, *C. Mossiae*, *C. Schroderæ*, *C. Warneri*, *Lælia purpurata*, *L. tenebrosa*, and the various *Cattleya* and *Lælio-Cattleya* hybrids that are beginning to grow anew. Plants of *Lælia anceps* and its numerous varieties are now growing fast and rooting freely. Now is the time to afford them plenty of root-moisture, drawing up the blinds early in the afternoon, damping well between the pots, stages, &c., and affording the plants a good overhead syringing.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Pineapples.—The plants of all ages should now be growing freely, filling the soil if they are in a healthy

ate with new roots, and rendering a liberal treatment very necessary. The bottom-heat should be kept up to 90° for fruiters, and 85° for successions, and 80° for those that are younger. With regard to the fruiting-plants, root moisture according to the particular needs of each plant, must be afforded to all, excepting those that indicate the ripening stage, which should not be afforded any. Occasionally weak manure may be afforded to the fruiters whilst the fruit is green, but not a large amount of aerial moisture, or the crowns will develop to an undesirable size. If a fruiting-house exists it is an easy matter to maintain the proper conditions, but if successions and fruiters are grown together their management becomes difficult, and the result is not as a rule very satisfactory. It is, of course, essential to keep those with fruits all together, and apart from the rest, and at the warmest part; and if more fruits are likely to be ripe at one time than there is demand for, the earliest ripe may be retarded by being placed in a cool, airy vinery when colouring begins. The temperature of the fruiting-house at dusk may be 75° at 6 A.M.; on dull, sunless days, 75°; and on sunny days it may vary from that figure to 90° when the house is closed. Avoid draughts of cold air, or air from the north-side of the house, reaching the plants. Usually tanners'-bark is employed as plunging material in a Pine-bed, either of itself to afford the necessary amount of bottom-heat, or to supplement the heating-apparatus; and in any case this body of material, if in a condition to afford heat, that is not decayed, will stand in need in the warmer months of an occasional application of very warm water, as without moisture tan alone ferments, and heats but slowly. Moreover, when in a dry state, the moisture is extracted from the soil in the pots, and from the bed of soil if they are grown without pots, to the detriment of the plants. To depend on the daily syringing of the bed is not enough. It frequently happens that a number of growths—"gills," in gardeners' parlance—form round the stalk at the base of the fruit, and more rarely round that of the crown; such should be twisted off as soon as observed, and also all suckers, excepting those needed to keep up the stock of plants, the strongest and best of which should be selected. In the case of scarce varieties, the crowns may be made use of, but the gardener must obtain possession of these as soon as the remains of the dessert are removed from the inner-table. It is a good practice to be always putting in a few suckers to root, and it is perhaps the only way in which a glut of fruit at one season, and scarcity at others, can be obviated.

Successions.—These plants should be kept slightly warm at top and bottom than the fruiters, and not lack for root-moisture; still, not affording one of them water until the state of the soil is ascertained. The chief points for the gardener to know are the state of the plants as regards their roots, and the condition of the soil in regard to moisture. Excessive over-potting is a thing to be avoided, it being the cause of unsuspected loss of roots; and a pot-bound condition, on the other hand, even if plant-food be supplied with guano-water and other liquid manures, is open to the risk of forcing the production of fruit at a time when the plant is too young to produce fine fruits, or of its coming when it is not required, and thus causing a scarcity at the right season. Successions must be kept in healthy growth at this the best season for making it, and to this end a moist, genial condition must be maintained in the house, in the plunging-bed, and in the soil in which the plants are grown, not, however, affording manure-water, the soil itself, if properly chosen, affording all the nutriment the plants need. On fine days, damp down at 8 A.M., afford a small quantity of air at 8.30 or 9 A.M., and again at 11 or at noon, damping the floors once or twice as may be necessary between whiles; the more sun the more moisture; and at 1 P.M. begin to reduce the ventilation, shutting up at 3 P.M., dewing the plants with tepid water, moistening the surface of the bed and the stems of the plants, and damping the floors and walls. On very sultry nights a small amount of ventilation may be given.

The Scalding of Grapes.—At this season the "scalding" of Grapes is commoner than at any other, and the dull weather that has this year prevailed during June renders fruit and foliage very liable to injury of this kind. Lady Downe's Seedling is one of the varieties very subject to scalding, and Madresfield Court is only a little less so, although no variety is immune. The injury is done at the latter part of the stoning period. In order to guard against scalding, let the heating apparatus be brought into use at the same time, maintaining the necessary

degree of warmth, and then ventilate freely. The vinery should indicate 70° at dusk, falling to 65° in the morning; and 70° to 75° should be the maximum on dull days, and on sunny days to 80° to 85°, shutting off the heat from the pipes if sunheat is sufficient. During the night some slight amount of ventilation may be afforded at the top of the vinery if rain can be excluded. The front ventilators may be opened by day when the day is very warm. Fungus diseases of the Vine are encouraged by a stagnant atmosphere in the vinery, which healthier conditions tend to check or prevent.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Onions.—The beds should be kept as clear of weeds as possible, and all plants damaged by the Onion-fly or mildew removed and burned. Let the bed be afforded a slight dressing of soot or guano, or of Thomson's plant-manure, mixing it with the surface-soil with the Dutch-hoe. This will tend to rapid growth, which is at all times necessary if the crop is at all grub infested. The Onion-plants raised under glass and transported in April are looking well this season. It is very necessary that the bed should be hoed often, and afforded the above-mentioned top dressing, although very little help with artificial manures will be needed if the land was well prepared in the autumn. The Onion-fly soon makes its presence known by the young plants toppling over instead of being erect, the result of the ingress of the grub just at the ground level.

Mushrooms.—Preparations may soon be made for making beds for furnishing the autumn supply. At this season the bed may be made up in a cool shed under trees. The quantity of short stable litter and horse-droppings should not be less than three or four one-horse cart-loads at a time, and should be allowed to ferment moderately, turning it occasionally, and throwing it into narrow ridges in order to keep down the fermentation and sweeten. When the rankness has been dissipated it is ready for making into beds. When this stage is reached it ought to be of a dark colour, soft, and damp enough when pressed by the hand not to fall asunder at once. The beds may be made of a width of 4 feet, and of any desired length. Let the manure be made firm by trampling and beating it, finishing off the top in a rounded fashion, or sloping like a saddle-roof. At first there will be a high temperature in the beds, which in a few days will fall to 80°, at which point the beds will be fit for spawning. In doing this, push pieces of spawn 1 inch square a little way into the manure, and cover with the manure, the pieces being placed in rows running across the beds at 8 inches apart. Having spawned the beds, cover them with mats or clean straw for a period of about eight days, when they should be covered thinly with good garden loam beaten rather firmly, so that it will not slip off; then put a covering of 1 foot thick stable-litter over all to conserve the heat of the dung, letting this be about 65°. Mushrooms should appear in from six to seven weeks from the date of spawning a bed.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Strawberry Runners.—If new plantations are contemplated, the layers should forthwith be laid on the soil, or on bits of dead turf, or if it be liked, in 60-sized pots. Whichever be the method, it is essential, if fruit is to be picked next year, to layer as early as it is possible to obtain the runners. Unless plants are scarce, employ only the first plantlet on a runner, and nip off the runner beyond the first layered. If the space between the rows admits of its being done without crowding the runners and the mother-plants, turn the runners from two rows into the alley between the two rows, and layer them there, as by doing this the workman in gathering fruit, affording water, and generally in attending to the layers, need not tread on them. Layers may be kept in position by means of wooden hooks or bits of stone, and perhaps the latter is best, on account of its keeping the soil moist at the point of contact with the runner. Provided the land for the new bed has been got in readiness, the rooted runners need not remain attached to the mother-plants after sufficient roots have pushed into the soil to support the new plants, but they may be planted forthwith. In dry weather the runners must be afforded water, but once the turves are properly soaked, not so much water is required as by layers in pots.

Packing the Fruit.—Strawberries for despatching a distance should be perfectly dry when gathered, and boxes made 2 inches deep inside, and all of one width and length are best for packing in, as these can be tied together to form one package when several are sent. A thin layer of the best wood-wool should be put into the bottom of each, over this a sheet of tissue-paper, and each fruit should be wrapped in a soft Strawberry leaflet, or a bit of Vine-leaf. Damage often arises in transit from the stems bruising the fruit, and the stems should in all cases be carefully placed at the bottom of the box. A covering of Vine or Strawberry leaves should be put over all, then a sheet of tissue-paper, and finally a sheet or two of wadding to prevent the movement of the fruits in transit. For sending by post the best wood-wool is the only kind of packing material I have found to give satisfaction, as it permits of less movement than wadding, however firmly the latter is packed. Wooden boxes, or those made of other materials that possess any kind of odour must on no account be used, and the best are made of Poplar, Plane, Willow, or the like.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to C. H. BERNERS, Esq., Woolverstone Park, Ipswich.

Adiantum cuneatum.—These plants may be cut over closely, and then stood in a cool frame or pit, and the amount of water afforded much reduced, in order to rest them for a few weeks. When they are started anew into growth, bring them into warmer quarters, and afford weak manure-water once a week, or less often, as may seem desirable; they will make nice plants by the autumn. Any that are much pot-bound may be shifted, and others may be split up if more are required. *Adiantum cuneatum* growing freely should be merely shaded slightly during the hottest part of the day, the fronds from such plants lasting in a fresh condition longer than those taken from heavily shaded plants. Plants from spores often found on damp walls and the floors of stoves may be placed in pans or in thumb-pots to grow on for future use.

Asplenium viviparum.—For indoor decorative work, this easily grown and very ornamental species should be commonly grown in gardens, and the present is a suitable season to remove the plantlets from the fronds, and place them in pans or in shallow boxes filled with a mixture consisting of leaf-mould and silver-sand. After pricking out and gently affording water, stand them in a moist, warm, shady pit, and by the end of the month of September they will have grown large enough to pot into thumbs and small 60's.

Gloxinias.—Any of the well-rooted seedlings now standing in 60's may be shifted into 48's, using for them a mixture of peat one-half, leaf-mould one-fourth, loam one-fourth, and plenty of sand and good drainage. Keep the tuber one-third of its height above the soil, and pot with moderate firmness. After repotting, keep close, moist, and warm, but do not syringe them, and before any plant is brought into a cool-house, let it be gradually inured to a lower temperature. Gloxinias always require shade from bright sunshine, and careful ventilation, and to be kept clear of Thrips and red-spider—their two worst enemies, and for this purpose vaporisation or fumigation must be resorted to. Plants gone out of flower should be afforded less water, and be eventually dried off.

Caladiums.—*C. argyrites* showing signs of having passed its best should be brought to a state of rest by very gradual drying off. The tubers of *C. argyrites* should not be kept, while at rest, in a parched condition, or they will perish. It is prudent to make an examination of the tubers at intervals, and afford the soil water sufficient in quantity to prevent excessive dryness in the tubers. Varieties of larger growth may be repotted into larger pots if an increase of size be desired. Afford them a slight amount of shade during bright sunshine, with day heat of 80°, and a few degrees more at closing time, and a night temperature of 68° to 70°, with plenty of aerial moisture and no stint at the root.

RAINFALL IN CEYLON.—On December 16 last at Newenkuni, 122 feet above sea-level, 31.72 inches of rain were measured within twenty-four hours. No wonder we read also of floods and other disasters. Newenkuni must have been the centre of a cyclonic disturbance. The *Tropical Agriculturist* of Ceylon gives numerous details in confirmation of this extraordinary rainfall.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

		{	M-nchester Royal Botanic Society Rose Show. Wood Green Horticultural Society's Show. Royal Botanic Society, General Meeting. National Amateur Gardening Asso- ciation(at Regent's Park.
SATURDAY,	JULY 9		
		{	Royal Horticultural Society's Com- mittees. Wolverhampton Horticultural Show (3 days).
TUESDAY,	JULY 12		
		{	Durham, Northumberland, and Newcastle-on-Tyne Horticultural Show, at Newcastle (Deputation from the Royal Horticultural Society). Rose and Horticultural Shows at Nottingham (2 days), Bedford, Maidstone, and Ipswich.
WEDNESDAY,	JULY 13		
		{	National Rose Society's Show at Halifax. Jerrey Gardeners' Floral Fête. Floral Fête (Hospital) at Canter- bury. Rose and Horticultural Shows at Salterhebble, Brentwood, and Reading.
THURSDAY,	JULY 14		
		{	New Brighton Rose and Horticul- tural Show.
SATURDAY,	JULY 16		
S A L E.			
FRIDAY,	JULY 15	{	Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—63° 3'.

ACTUAL TEMPERATURES:—

LONDON.—July 6 (6 P.M.): Max., 76°; Min., 60°.

PROVINCES.—July 6 (6 P.M.): Max., 74°, Hurst Castle; Min., 51°, Sumburgh Head.

Close, dull, &c.

Roses at the Crystal Palace.

The National Rose Society on Saturday last once again called its loyal members together, to take their part in the annual metropolitan competitive exhibition of the queenly flower it is the Society's life-work to encourage, popularise, admire—yea, and seek to improve. That every member does his best to exhibit, and does his very best when in the act of exhibiting, is true every year, and consequently of 1898. But the result is not always equally satisfactory. To make a grand exhibition in an unfavourable season is more than the National Society's resources can accomplish, and in such a year as 1898, the knowledge that he has done his best, has met his fellow Rose-cultivators in the annual gathering, has told his tale of incessant struggling against unkindly climatic influences, and has heard the similar tale of others—this is the Rose-exhibitor's chief source of satisfaction. It is pleasant to write that the event of Saturday was satisfactory from quite another standpoint, for the exhibition itself was a good one.

The anxiety felt during May and the greater part of June was very great, and ill to bear. It was occasioned by the extraordinary characteristics of the weather. May was less kind than March, and June was but a little warmer than April. Winds were as prevalent as sunless days. Cultivators inquired of each other

upon the prospects of the Rose season; and our own columns have contained several articles upon the subject. Everywhere was given the same answer, "late! late!"

It was about the time of the Bath Show that the general feeling of uncertainty was displaced by more optimistic forecasts. The words of a large trade grower then were these, "Yes, the blooms will be late, but they will be good; we shall have a good though late Rose season, and the hybrid Teas especially look exceedingly promising." Events have proved this view to have been very nearly correct. There was very little disappointment at the Crystal Palace, and it was heavily counterbalanced by a most opposite feeling. There was good competition, very few classes indeed failing in this respect. The following instances illustrate what a large number of Roses were shown in one class alone. In that for forty varieties in trebles (nurserymen), there were six exhibitors, and together they staged 720 blooms. Again, there were five competitors in the class for seventy-two blooms, distinct varieties (nurserymen), there being accordingly 360 blooms in the class. In the fight for the championship, Bedale and Hitchin have again given way before Colchester. Messrs. HARKNESS & SONS, who have held the trophy during the past two seasons, having this year failed before the veteran grower, Mr. B. R. CANT, and the second aspirants for the honour, also from Colchester, were Messrs. F. CANT & Co. The Colchester firms secured a very large share indeed of the spoils. Mr. B. R. CANT's collection of seventy-two blooms was a good one, and worthy of winning the much coveted prize awarded it. This season has seen Mr. C. TURNER a little closer to the front than of late. He was the first-prize exhibitor in the class for twenty-four blooms distinct, and showed a collection that we considered to be the best in quality of any collection in the show.

The Teas and Noisette Roses were good in size and substance, but occasionally suffered a little by disfigurement from rains. The only fault we had to find with the Teas was this lack of finish or refinement, and that only in some cases. The hybrid Teas were shown well, and it is beyond doubt that some of the prettiest Roses in cultivation have been pressed into service in this section. If we recall a Rose exhibition of a dozen years ago, we shall the better appreciate the handsome and distinct effect, also the gorgeous colouring that Saturday's show obtained from the varieties Mrs. W. G. Sharman Crawford, Mrs. W. J. Grant, and Comtesse de Nadaillac. In exhibits of trebles it could hardly escape the notice of anyone, that in almost all the classes there was the brilliant colour of Mrs. W. J. Grant, the three blooms being the first the eye would rest upon. The prettily-tinted Comtesse de Nadaillac was awarded the Silver Medal in both the nurserymen and amateur section, as being the best Tea or Noisette bloom in either case. In the former case it was shown by Mr. GEO. PRINCE, in the latter by Mr. A. HILL GRAY.

Medal Roses of the H.-P. section were Mrs. Jno. Laing and Gustave Piganeau. How frequently BENNETT's best Rose—Mrs. Jno. Laing—has obtained the Medal for the best H.-P. bloom! It was shown on this occasion by Mr. E. B. LINDSELL; and Messrs. TOWNSEND & SONS had the honour of the Medal for Gustave Piganeau. The Medals to Hybrid Teas were awarded to White Lady shown by Mr. C. J. GRAHAME (whose liberality in offering so many special prizes has been generally appreciated), and

to Mrs. W. J. Grant, from Messrs. PAUL & SON. Messrs. A. DICKSON & SONS competition for the best twelve Roses sent out by this firm again served to show how many fine Roses have emanated from this Irish nursery; but it is curious that Messrs. DICKSONS themselves should elect to compete in the class. They did, however, and were awarded first prize.

The date of the Palace Show was very suitable to the display of the pretty and showy garden-Roses. Messrs. PAUL's exhibit of thirty-six distinct varieties was a very fine one, and they were staged with such good taste and finish as would be difficult to excel. But this much goes without saying when we add that the collection obtaining second place was one from Messrs. GEO. COOLING & SONS, Bath, who so generally show Roses of this section in fine condition. Several new garden-Roses in Messrs. PAUL's exhibit are alluded to in our detailed report in another column. There were no many absolutely new Roses at the Palace. The Society's Gold Medal was awarded to the seedling hybrid Tea known as Purity, shown by Messrs. COOLING & SONS. It may be remembered that this variety received a card of commendation last season from the National Rose Society at the Portsmouth meeting. The Society has now given the highest award in its power to bestow. Messrs. PAUL showed their hybrid Rose Una, but it failed to obtain even a card of commendation.

In the amateurs' division there was generally good competition, and satisfactory quality. It is a fact that several well-known amateurs found the date of the show too early for them—a week later would have made all the difference. We emphasise the fact that the general quality was good, but it did not compare so favourably with that in the trade exhibits, as has been observed on many previous occasions. No one will grudge, and all will congratulate, Mr. E. B. LINDSELL, who had again the honour of winning the amateurs' championship trophy offered for the best collection of thirty-six distinct varieties. Mr. LINDSELL has now proved himself the champion grower for the seventh time in the last ten years. The winners in the three years when he was unsuccessful were the Rev. J. H. PEMBERTON, who is generally a little late for this show, and Messrs. S. P. BUDD and W. J. GRANT. Mr. LINDSELL's county is Hertfordshire, the Rev. PEMBERTON's Essex, Mr. BUDD's Somerset, and Mr. GRANT's was Hereford.

The amateur championship for Teas and Noisettes was won by Mr. A. HILL GRAY, the winner of this honour on the two previous occasions having been Mr. O. G. ORPEN, of Colchester. Mr. A. TATE, of Leatherhead, had the best garden Roses. The system of grouping the exhibitors into classes according to the resources of each, continues to work well, it tending to encourage cultivators to stage blooms, who under other conditions could scarcely hope to win a prize at all.

The nave of the Palace being available on Saturday, the Roses were staged once again in the manner that is apparently the most generally popular. The Palace show was a most enjoyable event, and everyone appeared in good spirits, including the venerable secretary, the Rev. H. H. D'OMBRAIN, whom all were pleased to see present. Mr. D'OMBRAIN was assisted in his work by Mr. ED. MAWLEY, hon. secretary, and Mr. GEO. BUNYARD. All eyes now turn to Halifax. There, the growers in the later districts will have their chance. May they equally well acquit themselves.

On Tuesday last the Council of the Royal Horticultural Society renewed the graceful invitation to the Committees which gave so much satisfaction last year. It is not necessary to point out to the frequent visitors to the Drill Hall in what the work of the several committees consists, but for the sake of those at a distance, who are not familiar with the working of the Society, it may be desirable to allude to the subject. Throughout the year the committees meet every fortnight, and give up the day

imminent, the committees continued their work as zealously as they do now under happier auspices. The Society is clearly under great obligations to the committees, and the Council did well to take an opportunity of expressing their recognition of the fact. Sir TREVOR LAWRENCE, a stalwart, who stuck to the Society in its evil days, and is never wanting when work is to be done, occupied the chair, and expressed his sense of the work done by the committees, whom he designated as the backbone of the Society. Sir TREVOR threw out the suggestion that

throughout, and had proved themselves as the President had said, the backbone of the society. Mr. DYER alluded to the first Temple Show, an undertaking initiated with some apprehension. The Covent Garden growers and others were approached on the subject, and readily responded, and so the first Temple Show proved a success, and subsequent gatherings, favoured by weather, have been increasingly successful.

Alluding to the forthcoming Paris Exhibition of 1900, Mr. THISELTON-DYER threw out the suggestion that our fruit-growers should send



FIG. 9. STANHOPEA RODIGASIANA: NEW SPS. (SEE P. 32.)

without fee or reward, to the business of the Society. They pass in review all the exhibits entered for certificates, and assess their merits with judgment and impartiality. That they do not always give universal satisfaction is to say that they are hard-working human beings. It is only the idlers who are never wrong, and most of us would prefer to be occasionally wrong with the conscientious hard-workers, than negatively right with those who do nothing. The committees, moreover, supervise the numerous trials made in the experimental garden at Chiswick. In the old days of gloom and depression when ruin seemed

sooner or later it would be necessary to seek some other spot for an experimental garden, the present garden being too limited in area, too much built in, and the soil more or less exhausted. Sir TREVOR concluded his speech by drinking to the health of the committees, and calling upon Mr. THISELTON-DYER, the Director of the Royal Gardens, Kew, to respond.

Mr. DYER in reply, made a graceful and sympathetic speech, alluding to the evil days at South Kensington, and to the vigorous efforts (in which Mr. DYER himself had no small part), which were necessary to reinstate the society. The committees also had stuck to the society

periodically specimens of their produce, as it was abundantly clear that English-grown fruit was, as a rule, infinitely superior to that grown on the continent.

After a vote of thanks to the President, the members dispersed to inspect the garden. Want of rain is manifested in every part of the garden. There was a parched-up appearance on every hand, and it would seem that this particular part of the county has had a smaller rainfall than adjacent districts.

The trial of Tea Roses, which proved so successful last year, is continued, and there is also repeated a border of early-flowering

Chrysanthemums. In one of the flower-beds by the side of the walk leading from the great vinery to the Sutton Court Road, there is a bed of a compact, well-formed, yellow-flowered type of *Zinnia Haageana imbricata*, which promises to form a very pleasing feature. Those interested in perennial *Campanulas* will find a considerable number of species in flower on the rock-work. The white *Solanum Balbisii* is to be found in a bed near the Council Chamber. Many subjects such as zonal *Pelargoniums*, &c. are planted out, and will doubtless engage the attention of the Floral Committee by-and-by.

Under glass there is a comprehensive trial of *Cannas* coming on, which will repay inspection. A fine collection of *Gloxinias* are past their best, but they have been very striking. *Lantanas*, *Fuchsias*, *Heliotropes*, &c., are also to be seen in collections. In the frames Mr. WRIGHT has a number of seedling plants of *Dabeocia*, *Ledum*, and *Eucryphia pinnatifida* he has raised, which will probably be distributed to the Fellows in due course.

In one house can be seen growing on the roof a new and very beautiful *Passion-flower* raised from seeds from British Guiana, supplied Dr. MASTERS. The propagating-pit has been re-roofed, and Mr. WRIGHT speaks in the highest terms of its usefulness and adaptability.

The Vegetables and Fruit are alluded to in another column.

STANTHOPEA RODIGASIANA.—On June 28, Sir T. LAWRENCE, Bart., exhibited the remarkable *Stanthopea Rodigasiana* (fig. 9, p. 31), which illustrates a new section of the genus. The plant possessed one expanded flower, and one unopened flower-bud; and, as is usual in *Stanthopeas*, these were attached to a pendent stalk of about 1 foot in length. The prevailing colour of the flower is creamy-white, with dense purple spots on the sepals and petals; that of the lip is pinkish, excepting in the middle area, where the prevailing colour is repeated; and at the base, where it is blackish-purple. The reverse of the petals and sepals abounds with light-brown coloured spots. For a full description of this striking novelty, see p. 14 in our issue for July 2.

ROYAL HORTICULTURAL SOCIETY.—The next fruit and floral meetings of the Royal Horticultural Society will be held on Tuesday, July 12, in the Drill Hall, James Street, Westminster, 1 to 5 p.m. On this occasion special prizes will be offered for Roses; and at 3 o'clock a lecture on "Edible Peas" will be given by Mr. N. N. SHERWOOD, V.M.H.

HORTICULTURAL CLUB.—The annual excursion, to which ladies are invited, is fixed for Tuesday, July 19:—Members will meet at the first-class waiting-room of the Great Western Railway at Paddington at 9.45, and will proceed in a saloon-carriage to Slough by the 10 o'clock train, where carriages will be waiting for them; they will then drive to the village of Stoke Pogis, in the churchyard which the poet GRAY is buried, and if time permits go through the gardens of Stoke Park. They will then proceed to Mr. VEITCH's residence, East Burnham Park, where luncheon will be provided for them; after luncheon they will proceed through Burnham Beeches to Dropmore, and then return through Burnham Beeches to Mr. VEITCH's to tea, returning from Slough by the 7.38 train. It is estimated that the cost will be 9s each. Each member is entitled to bring one friend, lady or gentleman. Members wishing to join the excursion will kindly announce their intention to HARRY J. VEITCH, Esq., Royal Exotic Nursery, King's Road, Chelsea, by July 9, forwarding at the same time, to save trouble, the amount of ticket or tickets.

NATIONAL CARNATION AND PICOTEE SOCIETY (POSTPONEMENT).—We are asked to state that in consequence of the backward character of the season, the Southern Show, which is to be held at the Crystal Palace, has been postponed from July 20 to July 27.

YORKSHIRE NATURALISTS' UNION.—The 139th meeting will be held at Leyburn, for Jervaulx Abbey, this day, Saturday, July 9, 1898. The district to be investigated—with Jervaulx Abbey as a centre, includes the lower portion of Wensleydale, from Leyburn to Masham, an area which seems never to have been systematically worked in any department of natural history. The lists and notes which have been published in respect of the Wensleydale flora and fauna have either been for the upper portions of the dale, to which attention has been paid by FOTHERGILL, BAKER, PERCIVAL, and LEES, or for the neighbourhood of Masham lower down, which has been well worked by Mr. JAMES CARTER and his sons. The Jervaulx tract therefore seems a perfect blank in our knowledge of the distribution of Yorkshire plants and animals, and one likely to amply repay investigation. Routes: All parties will drive from Leyburn to Jervaulx, the conveyances starting from the station immediately on arrival of the 11.36 A.M. train. I. The general body of naturalists, led by Mr. HARTSHORN and others, will explore the neighbourhood of Jervaulx Abbey, the conveyances returning to Leyburn at 4 p.m. II. The geologists, led by Mr. W. HORNE, F.G.S., will accompany the first party to Jervaulx, but will leave at 3 o'clock for Harby Quarries. Admission to Jervaulx Abbey Grounds: Arrangements have been made for free admission to members showing their cards. Without cards the ordinary fee of 6d. will be charged. On this occasion the botanists have the unusual advantage of a virgin field for exploration, as there do not appear to be any published records for the immediate neighbourhood of Jervaulx Abbey, not even in BAKER's *North Yorkshire*, nor in PERCIVAL's *Flora of Wensleydale*, which appeared in the *Naturalist* for 1888. Mr. W. SCOTT, the gardener at Jervaulx Abbey, mentions that *Echium plantagineum*, which grows in the Abbey ruins, several Ferns, and *Typha latifolia*, mentioned by W. G. M. JONES BARKER as growing near Jervaulx, are the only noteworthy forms met with in the immediate neighbourhood.

DR. GEORGE BAUR.—Science, writes Mr. BORTING HEMSLEY, has lost another devoted servant in the person of GEORGE BAUR. He was for some time Professor of Osteology and Palaeontology in the University of Chicago, but his name has been more prominently before men of science during the last few years in connection with the origin and natural history of the Galapagos Islands than with his position in the University. He was an enthusiastic worker, but illness overtook him, and he returned to his native country for rest and recovery. This was denied him, and he died on the 25th ult., after much suffering. During the last few years he wrote and lectured much against the theory that the Galapagos originated by upheaval from the ocean; and although his views met with contemptuous rejection in certain quarters, there is no doubt that biological evidence is strongly in his favour. I may, says Mr. HEMSLEY, perhaps have an opportunity of laying further particulars of this interesting subject before the readers of the *Gardeners' Chronicle*.

TWIN CUCUMBER.—We have received from Mr. R. REYNOLDS, Cliff Lodge, Hyde Park, Leeds, a typical specimen of a twin Cucumber. This union of two fruits longitudinally, the result of two flowers being united at a very early stage, is by no means uncommon, as the large number of instances sent to this office sufficiently testify. Our thanks are also due to our correspondent for several photographs of the fruits.

THE FLORIDA VELVET BEAN.—Captain E. A. WILSON, of Orlando, Florida, has sent us a few specimens of the seeds of some leguminous plant, perhaps a species of *Mucuna*. The seeds themselves are prettily marked, and we learn that some of them are in growth at Kew, so that we shall, in due time, learn the species to which they belong. The plant is said to be "invaluable for all kinds of stock as a forage, and a phenomenal fertiliser for Orange and other fruit trees." We omit the other laudatory descrip-

tions, because, even assuming them to be justified in Florida, we could not expect them to be so here. The analysis of the Bean is as remarkable as the rest of the description—"Nitrogen, 54 per cent.; crude protein, 19; fat, 6; fibre, 8; moisture, 12."

COMING OF AGE FESTIVITIES AT STOURBRIDGE.—The coming of age of Mr. E. STANLEY WEBB—eldest son of Mr. EDWARD WEBB—was celebrated on Saturday afternoon, June 25, Mr. and Mrs. WEBB having invited the staff of Messrs. WEBB & SONS to their residence, Studley Court, Stourbridge. There were about 400 present, including the staff from Wordsley and the workpeople from the Kinver seed farms, also the managers from the chemical works at Chester. Fine weather prevailed, and the visitors were enabled to spend a very pleasant time. A variety of games was provided for their amusement, whilst many availed themselves of boating on the lake. The house and grounds were open, and in the early part of the proceedings afternoon tea was served. The band of the 2nd Batt. Bedfordshire Regt. gave great pleasure by their performances. Dinner was served in a marquee, after Mr. W. W. WYLD, on behalf of the staff, presented Mr. STANLEY WEBB with an illuminated address, together with several articles, including a travelling bag, dressing-case, hunting-crop, sandwich-case, &c. Mr. STANLEY WEBB in responding, said he could not sufficiently thank them for the kindly feeling towards him as expressed in the address, and he also acknowledged his indebtedness to them for the assistance they had given him since his connection with the business. "Success to the Firm" was proposed by Mr. J. W. BERRINGTON, who referred to the great abilities and untiring energies of the firm—Col. WEBB and Mr. EDWARD WEBB. They always kept the business abreast with the times. Every year saw some new development. Col. WEBB in replying said, great as the business was, wonderful as the growth had been, he confidently looked forward to even greater progress in the future.

A METHOD OF TRAPPING ANTS.—We read in one of Mr. HARMSWORTH's little magazines the other day of a ready means of catching ants. It is to take a large sponge and sprinkle it well with moist or pounded loaf sugar, and set in the vicinity of the ant's nest. These little troublesome creatures eat sugar with avidity, and soon swarm all over and in the interstices of the sponge. When this is noticed throw the sponge into boiling water and let it remain for a few minutes. Then wash out the dead ants, sprinkle the sponge with sugar, and lay it as before. If this be persevered in for a few days every ant will be destroyed.

CAMBRIDGE BOTANIC GARDEN.—In the annual report of the Botanic Garden Syndicate, it is stated that during the past year 2284 plants, 6026 bulbs, and 2830 packets of seed have been received. Contributions have been received from numerous botanic gardens, and a return has been made to most of them, 2426 plants and 3230 packets of seeds having been distributed. Among the more interesting and important plants received are *Tmesipteris tannensis*, an ally of *Psilotum*, of which little recently was known; *Hemitelia capensis*, a much desired Tree-Fern; *Polypodium Schneideri*, a remarkable hybrid Fern; *Coryanthes macrantha*, an Orchid with extraordinary means for securing cross-fertilisation; *Augæum Eichlerianum*, and various other choice Orchids; *Aloe Lynchi*, Baker, a bi-generic hybrid; *Anemopaegma carterense*, a new *Bignonia*, described in the *Journal of Botany* for May, 1898, p. 188; *Echeveria Purpusii*, a new yellow-flowered species; *Gmelina hystrix*, *Bot. Mag.*, 1894, t. 7391, a very little-known plant of the order Verbenaceæ, from the Philippines; *Gunnera insignis*, a gigantic and remarkable new species; *Myriocarpa longipes*, a peculiar plant of the order Urticaceæ, with racemes nearly 5 feet in length; *Sechium edule*, the Chocho of the West Indies; *Trochetia Blackburniana* (*Bot. Mag.*, 1891, t. 7209), an additional genus, "one of the most

See paper "On the Structure of a Hybrid Fern," by Prof. J. B. FARMER, *Annals of Botany*, vol. xi., 1897, p. 533.

interesting genera of plants on account of its unique distribution; *Veronica macroura*, said to be a good acquisition; *Zizania aquatica* (Canada Rice), used as a cereal by North American Indians; and several new Somali-land plants introduced to the Cambridge Botanic Garden, among which may be mentioned one of a probably new genus; *Dorstenia arabica*, and *Senecio Gunnisii*, the two latter being very peculiar representatives of their respective genera. Among the plants of interest that have flowered are:—*Boea Clarkeana*, Hemsl., a new Gesneriad; *Aristolochia saccata*, an interesting species; *Pæonia Emodi*, a rare species of the Himalayas; *Richardia Pentlandi*, a handsome new species

phytum tenuifolium, and several other plants from Somali-land. Numerous hybrids among allies of the garden *Cineraria*, raised by Miss PERTZ and the Curator, have flowered, and were exhibited at meetings of the Royal Horticultural Society and Philosophical Society. The collection of Willows, numbering about eighty-four kinds, and complete as to British species, has had the advantage of revision by the Rev. EDWARD F. LINTON of Bournemouth. The plants have been duly labelled, and specimens have been dried for future reference. The number of specimens supplied for botanical purposes, including those that were put into alcohol, during the year ending with Lent term, amounts to about 80,000.



FIG. 10.—*CAMPANULA MIRABILIS*: COLOUR OF THE FLOWERS PALE BLUE. (NAT. SIZE.)

with a yellow spathe; *Iris bosniaca*, a new, bearded species; *Pleurothallis puberula*, Rolfe; *Mastdevallia muscosa*, one of the most curious of the species, and remarkable on account of its sensitive labellum; *Lycoris squamigera*, a handsome new border bulb with rosy-lilac flowers; *Calystegia affinis*, from Norfolk Island, regarded as a geographical form of our own *C. sepium*; *Stapelia gigantea* var., apparently a distinct form of this fine plant; *Crassula abyssinica*, a good addition to the succulent collection; *Chelidonium leptopodum*, Prain, a charming new species; *Solanum cornutum*, illustrated in the *Gardeners' Chronicle*, October 30, 1897; *Huernia somalica*, a new species introduced to the Cambridge garden by Mrs. Lort-Phillips; *Acidanthera Gunnisii*, a new and pretty white Irid collected by the same lady; *Cyperus obtusiflorus*; *Ocimum staminosum*, *Cloro-*

CAMPANULA MIRABILIS.

UNDER this name M. Correvon wrote in the year 1896 in the *Revue Horticole* of a species discovered in the Caucasus by M. Alboff, and described in the *Bulletin de l'Herbier Boissier*, t. 3, n. 5.

On the occasion of the last meeting of the Royal Horticultural Society, at the Drill Hall, S.W., a plant of this species was shown in flower (fig. 10) by Messrs. G. Jackman & Son, of Woking, which engaged the attention of most of the persons who saw it. The plant shown had a lax pyramidal habit, serrated orbicular leaves, with the general aspect of *Campanula medium*, and numerous flowers of a pale blue flower, or nearly of the hue of those of *C. carpatica*, and of about the same size.

HOME CORRESPONDENCE.

THE GARDENING CHARITIES.—In reply to Mr. Monro, as regards the Royal Benevolent Society, I can only say that I obtained, or did my best to obtain, from head-quarters, the fullest information before writing, and in all the papers and information received there was not one single word referring to the subscribers being sure of anything except a vote. If this is altered, and they are now sure of help if needed, then the whole matter is on a totally different basis, and it will be well that this should be known; perhaps Mr. Monro will be good enough to let me have the information officially. The fact that there are so very few subscribers amongst the gardeners shows that either I was correct in my statements, or Mr. Monro's further information is not known. If he will send me the confirmation of his statement, from an official source, I shall be pleased to send £20 to the Treasurer of the Royal Benevolent Institution. The only condition necessary is that every subscriber who is a gardener shall be absolutely certain that at least the amount of his payments, plus 2½ per cent. compound interest shall be guaranteed, if applied for, either at the age of, say, 65 or at death. He can get this from the Post-office Savings-bank, without charity, and he or his survivors should be able to claim it as an absolute right. This simple insurance scheme could easily be arranged. May I suggest to some correspondents that personal abuse proves nothing, and that I have yet to see the accounts of any gardeners' sick or provident club which will approach the Post-office Savings-bank as a means of providing for old age or sickness. The usual rule is in these societies that some 40 per cent. of the money subscribed goes in commissions, salaries, and expenses, and that nearly one half the money is therefore lost to the members. This is not so in the Royal Benevolent, but this Society does not fill the place of a club which is a certain fund to every member; it is good in its way, but it does not provide for the future of all who pay; it is a charity, pure and simple. One person states that I know nothing about gardeners or their wages. I know enough to be certain that it is one of the worst paid occupations, and that a man with equal skill and accumulated knowledge can make more money at almost any other kind of work. My object in writing was simply to call attention to the fact that the gardeners could, amongst themselves, start a club on sound lines, which would ensure their families enough to give them an opportunity to start again when the breadwinner was gone, whether they were in absolute poverty or not. My statements are, so far as the information supplied goes, simple facts, and it is in the interest of gardeners generally that I have taken the matter up; the figures supplied will be a revelation to most if not all who have read them. As a further mild criticism on the management of the minor insurance and friendly (so called) societies, it is interesting to learn from the Insurance blue book for 1896-97, that no fewer than forty-one have disappeared during the year, reported as either "gone" or in liquidation, and also that not one gardeners' society balance-sheet appears. As stated in the introduction, "publicity means death to the insolvent." Mr. Monro's letter is clear and to the point, and I hope mine is equally so; the only difference between us is that he is considering charity, I am considering provision for the future for all whether they are likely to need charity or not. *Thos. Fletcher, Grappenhall, Cheshire.*

—Owing to the courtesy of Mr. Thos. Fletcher in sending me a copy of his letter forwarded to you, I am able to reply to it in the same issue, and need not take up much of your space in doing so, as I can only argue on the basis of the Gardeners' Royal Benevolent Institution, as it is a "gardening charity" and not as Mr. Fletcher states it should be, an insurance or benefit society. It was never intended to be anything of the kind. I am very pleased to see Mr. Fletcher's generous offer of £20 to the Treasurer if I can prove what I stated, as the Institution will benefit to that amount. I am writing the Secretary on the matter, and if I overstated the case I will pay the amount. I am also glad to find that Mr. Fletcher is not a gardener, and that up to the present he has not found one to back up his criticism of the Institution, which goes far in my mind to prove that the gardeners do approve of the lines on which this charity is conducted. Mr. Fletcher's other remarks cover a wide field, and touch matters on which I cannot follow. *Geo. Monro, Covent Garden Market.*

— In reply to your request for official information as to the advantages to be gained by gardeners who subscribe to the Institution, I beg to refer you to, firstly, Rule III., 5, which provides that, gardeners who have been subscribers for fifteen years may, if in need and eligible for assistance, be placed on the funds without election at £20 a year, and this applies equally to the widows of such at the lesser sum of £16 a year. Secondly, to Rule III., 10, under which a candidate who has subscribed from four to fourteen years is credited with a certain number of votes in proportion to the number of years he has subscribed; and thirdly, to the "Victorian Era Fund," which is devoted exclusively to the benefit of subscribers, and from which a yearly sum is given to candidates according to the number of years' subscriptions, and until they are elected permanent pensioners. With regard to this latter fund, perhaps I cannot do better than give you the names of those candidates now on our list, the number of years they, or their late husbands subscribed, and the amount they will this year each receive:—

Name.	Number of years Subscribed.	Amount given for 1898.
Andrew Bryan ...	13 ...	£9 15 0
Francis Nixon ...	13 ...	9 15 0
James Plevy ...	12 ...	9 0 0
Geo. Staples ...	11 ...	8 5 0
Caroline Wood ...	11 ...	8 5 0
John Gibbons ...	10 ...	7 10 0
James Watt ...	10 ...	7 10 0
Elizabeth Hackwell ...	9 ...	6 15 0
Geo. Wills ...	9 ...	6 15 0
Alfred Barnfield ...	8 ...	6 0 0
Annie Hatch ...	8 ...	6 0 0
Lucy Mitchell ...	7 ...	5 5 0
Joseph Sheam ...	7 ...	5 5 0
Alex. Lee ...	5 ...	3 15 0
Thos. Evans ...	4 ...	3 0 0
W. Gould ...	2 ...	1 10 0
W. Thomas ...	2 ...	1 10 0
Emma Woodward ...	1 ...	15 0

I might also refer you to the case of Eleanor Brown, formerly a pensioner on our funds, who died quite recently. Her late husband subscribed £1 ls. yearly for sixteen years. Being in need, he applied at the age of 76 for assistance, and he was placed on the pension list. He died in 1875, when his widow made application to succeed to the pension. Her application being eligible, she was put on the funds under Rule III., 13, and she continued to enjoy the pension until a few weeks ago. This case speaks for itself. The husband subscribed altogether £16 16s., and he and his wife between them received from the Institution no less a sum than £468! *George J. Ingram, Secretary.*

SCUTELLARIA ORIENTALIS VAR. PINNATIFIDA.—I raised my plant from seed collected in the Mountains of the Peloponnese, and the name was given me by Dr. Heldreich, so it is probably correct; otherwise it seems to coincide with the type as described in *Nicholson's Dictionary*. It is a very charming little Alpine. The bright yellow flowers stand well above the foliage, and as they all bloom at once they are very effective. Mr. Nicholson gives August as the flowering month, and my seedlings bloomed in August; but the fully-grown plant flowers in June. I notice that M. Correvon offers both seed and plants of the type, so it is within anyone's reach. *A. K. Bulley, West Kirby, June 26.*

DIXON'S MIDSUMMER BROCCOLI.—I do not know whether the variety of Broccoli mentioned by Mr. Burberry, p. 8, is in any way synonymous with the one we grow here under the above name. In any case it is an excellent variety for late consumption. At this place nice heads were cut on midsummer-day last, quite white, and very close in texture. This Broccoli has the, to me, desirable qualification that it is not over-large. The plants were grown on a north border, and were raised from seed sown at the end of the month of April, 1897. I got the seed from a gardening friend in Yorkshire, who told me that he first procured his stock from the old-established firm of seedsmen, Messrs. Dixon & Sons, Hull. *H. J. C., Grimston, Tadcaster.*

ARTIFICIAL MANURES.—The subject of artificial manures, when used with stable and farmyard manures, is so important that I need not apologise for referring to it again once more, and only once. "J. P." in the *Gardeners' Chronicle* of May 21, p. 317, relates that he uses, with satisfactory results, a mixture of artificial manures and animal manures. There seems, however, evidence to show that of two plots with the same crop, one manured with animal manures, and the other with a mixture of animal and artificial manures, the result was the same. Now if this be true, it would point to the fact that the

addition of artificial manures in such cases was useless and wasteful. Nitrates are used for the sake of their nitrogen, and if the German experiments prove that this nitrogen, in contact with dung, escapes in its elementary form, it would seem absurd to mix the two. "J. P.'s" experience is not sufficiently convincing, for it seems to lack scientific accuracy. He does not say that he has ever made any test experiments—that is, manuring one plot with animal manures only, and an equal plot, with the same crop, with his mixture, to ascertain whether there would be any difference in the result. On so important a subject it would seem the function of the two great royal societies—the agricultural and the horticultural—to make a series of accurate experiments to try and discover what truth, and how much of it, there is in "denitrification" by contact with animal manures. "J. P.'s" mixture might be used on one plot, and animal manures on a similar plot, and other variations. The soil and crop must be the same, and the previous crop should be noted, as it might affect the result. This important question cannot be solved by one experiment. A series of careful and accurate experiments will have to be made, in order to eliminate any sources of error. There was a profound practical notion that Potatoes must be earthing-up, in order to ensure a crop; and it was only the other day that at Chiswick the R.H.S. found that earthing-up and not earthing-up gave exactly the same result. What a waste of labour then has been for ages devoted to growing Potatoes by the earthing-up method! So it may be with many other conventional and traditional notions. Laboratory experiments conducted with all possible scientific accuracy are very useful, but they require to be tested and confirmed on a large scale in agricultural and horticultural operations, and these can be only done by the two Royal Societies. Experiments by private firms, and also by amateurs, may help to bring out the truth from what now appears a sort of tangle of contradictions. *E. Bonavia, M.D.*

THE SPARROW.—The above-named homely bird by its friends is considered to possess many virtues, and by its enemies is ranked as a most destructive bird, to be destroyed without mercy at all costs; but, as usual, the golden mean or moderate course I consider the best way of dealing with this hardy, active, cheerful bird. I have noticed on these last two days swarms of sparrows eating the caterpillars that are still on the Oak trees, and which have now entered the chrysalis stage. In the caterpillar or feeding stage, the sparrows did not seem to eat them; rooks and starlings seemed to be living on them, but now the rooks have gone to the farms for grubs, small Potatoes, &c., and the starlings for Cherries and the cattle-pastures and sheepfolds, and the sparrows, chaffinches, and titmice of various varieties are busy eating the chrysalis of the various looper caterpillar on forest and fruit trees, within 50 yards of where I noticed the sparrows so busy, both old and young, on the Oak trees. We have several good rows of Peas that are in bearing, and I have not noticed a single pod damaged by sparrows, that it seems they sometimes at least prefer insect food to pulse or grain. *R. M., Newbury, June 28.*

STERCULIA NEO-CALEDONICA.—The remarks on *Sterculia neo-caledonica* on p. 178 of your issue of March 26 last, interest me. The name appears to be a mistake, unless *austro-caledonica* is a mistake in *Bot. Mag.*, t. 7382. We have two plants of *S. austro-caledonica*, Hook. f. (*Bot. Mag.*), which grow well in the open in this garden, and flower every spring. The description given in the *Gardeners' Chronicle* applies entirely to our plant, with the exception that our leaves are only about 1 foot in diameter, as against "some 4 feet in diameter," and 2 feet in diameter of the *Bot. Mag.* The plants are singularly graceful, Aralia-like, and their crown of leaves is 4 or 5 feet in diameter. Perhaps "W. W." is referring to the crown as 4 feet in diameter, but the construction of the sentence would appear to be against this idea. *J. H. Maiden, Sydney.*

ANT DESTROYERS.—Noticing a reply to a correspondent's inquiry in last week's *Gardeners' Chronicle*, for a remedy for the extermination of ants in a Peach-house, allow me to call his attention to the Ballikrain Ant Destroyer, which he will find most effectual if used according to the directions accompanying it. A few years ago, this place was completely over-run with the voracious black ant, which played havoc with ripe fruit, and especially with Figs. I tried several remedies, but failed to reduce their numbers, until Mr. Hughes, the gar-

dener at Wentworth-Woodhouse, came to the rescue. His interesting letter in the *Gardeners' Chronicle* a few years ago showing how he succeeded in exterminating ants from glasshouses determined me to try the effects of the Ballikrain Ant Destroyer. Its use has rid me of these little plagues very effectually. Surely, it would pay the vendors, Messrs. Cross & Sons, Glasgow, to advertise the destroyer in the horticultural papers, as scarcely a week passes but that some one is enquiring in the gardening papers for an ant exterminator. *J. Easter, Nostell Priory Gardens.*

AN EXPLOSION OF WEED-KILLER.—A customer of ours, who a few days since purchased two tins of weed-killer, in the form of powder, from a local chemist, has reported the following extraordinary occurrence. For security he placed the unopened parcel containing the two tins on the top shelf of his conservatory, and on the afternoon of the second day later a loud explosion took place, the ends of both tins being blown out, and the contents scattered throughout the house, ruining practically the whole of the plants, many being dead within a day, and the remainder so badly scalded and disfigured that they will probably not survive. Whether the explosion was caused by sun heat, or whether—though the tins are apparently air-tight—atmospheric moisture had entered and caused a chemical combustion of the contents is unknown, but it would perhaps be well for users to provide against either contingency by keeping in a cool, dry place. *C. P. & Co.*

VINES AND RICHARDS' XL-ALL.—Having read in the *Gardeners' Chronicle* of July 2, A. J. Nightingale's experience with the use of XL-All vapouriser, I should like to state that I have used it very successfully for two years in a vinery planted with black Hamburgh, Foster's Seedling, black Alicante, and filled with a miscellaneous collection of plants. I have always found the vapour performed its work satisfactorily and without causing the slightest injury to any of the Vines or plants. I have used it in the plant-stove without damage to any plants. Perhaps your correspondent, "A. J. Nightingale," made a too-free use of it, which may account for the damage done. *E. H. Chitty, Chomely Lodge Gardens, Highgate.*

ESCALLONIA PHILIPPIANA.—A plant so named, now in bloom in a friend's garden, has deliciously sweet-scented white flowers. Has the new hybrid *Escallonia langleyensis* inherited this peculiarity? I do not find in *Nicholson's Dictionary* any allusion to a sweet-scented species. *W. Thomson, Bishop's Teignton.* [They are all more or less aromatic. Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

Meeting of the Committees at Chiswick.

THE FLORAL COMMITTEE.

JULY 5.—The following members met at the gardens of the Society on the above date, viz., W. Marshall, Esq., chairman, W. Bain, E. Beckett, E. T. Cook, D. R. Crane, R. Dean, J. H. Fitt, J. Fraser, G. Gordon, H. Herbst, W. Howe, H. J. Jones, J. Laing, Senr., J. F. McLeod, H. B. May, C. E. Pearson, C. J. Salter, T. W. Sanders, H. Selfe Leonard, G. Stevens, Owen Thomas, and J. Walker.

The object of the meeting was to examine the Violas, of which there is a large number of varieties new and old. It must be admitted that the conditions at Chiswick are not favourable to such a trial. To do them justice they need a clear, open, airy spot, free from atmospheric impurities, and where there is a fairly stiff, gritty soil. Then, to still further accentuate the test, the varieties should be planted out in the autumn, and then, if of hardy constitution, they will become well established in the soil, and afford a fairly good estimate of their value. Violas planted out in spring do not afford a fair test by the first week in July. They have not become acclimatised to the somewhat antagonistic conditions which prevail at Chiswick; nor have they had time to become well established in the soil, so as to display their capabilities. Another advantage gained from autumn planting would be to afford a test of early flowering, for a race of early-blooming Violas of hardy constitution is badly wanted in the spring garden. It is to be hoped that before long the Society will be able to provide itself with a new garden in some open, breezy spot, where important trials can be carried out, in the assurance that the best results may be expected to follow.

The following varieties received three marks:—Iona, mauve and blue-black, one of the most striking varieties yet raised; Mrs. H. Bellamy, pale lavender and deep purple;

Marchioness, for compactness of habit, freedom of bloom purity and shape, the best white yet raised; Bullion, for its earliness and persistency among the yellow Violas; Countess of Hopetoun, an old but very useful white, much employed for bedding purposes; Sir Robert Puller, a large purple variety, a strong grower; J. B. Riding, pale, mauve-claret; Jack-a-napes, yellow lower petals with crimson top, inferior in shape; Diana, pale lavender-blue; Wrayman, white, very like Countess of Hopetoun, but more compact habit; Mrs. C. F. Gordon, a great improvement upon Countess of Kintore, very handsome; Duchess of Fife; Haimish, claret lower petals, with pale top petals; Princess Louise, a small pale yellow of fine form; and Blue Gown, a very fine deep mauve bedding variety. Generally the Violas were suffering from drought in the light porous soil of Chiswick.

FRUIT AND VEGETABLE COMMITTEE.

The attendance of members was, for Chiswick, unusually large, and included Mr. P. Crowley, chairman, Rev. W. Wilks, secretary, and Messrs. H. Balderson, G. Bunyard, A. F. Barron, W. Bates, J. Cheal, W. Crump, A. Dean, W. H. Divers, W. Farr, R. Fyfe, C. Herrin, J. Laing, F. Q. Lane, G. Norman, R. Parker, W. Pope, W. Poupert, J. Smith, J. H. Veitch, H. W. Ward, J. Willard, G. Woodward, and G. Wythes.

An odd exhibit, to which attention was called, was a number of Mallett's patent market sieves and pecks, made of narrow strips of wood, with small openings between for ventilation, fixed into stout flat hoops, top and bottom, the bottoms resembling those of bent-wood chairs, numerous perforated with holes, also for air. They are very stout and enduring, and much superior articles for fruit transit than are the usual wicker-made round baskets of the London markets. The price was not stated. The patent baskets were sent through Mr. G. Bunyard, and are said to be of Russian make. Their value for marketing largely depends on price. It was agreed to leave a few of each size to be used in the gardens for trial; certainly the best test would have been made by some market gardener.

Messrs. LAXTON & SONS exhibited fruits of the new Strawberry Thos. Laxton, the product of a cross between Jas. Veitch and Royal Sovereign. The fruits, which were of good size and colour, seemed to favour the first-named parent mostly. The large fruits were mellow, but flavour was lacking; also were submitted some very fine rich-coloured fruits, and a plant lifted from the ground of Mentmore, a variety that obtained an Award of Merit last year at Chiswick, when it was so good. This is from a cross between Noble and British Queen. The product is a very firm, solid, fine, rich-coloured fruit, that is, as acid as Sir C. Napier, but it has little flavour; evidently it will make a capital traveller. The Strawberries growing in the gardens seem to have suffered firstly from the late spring-frosts, and secondly from lack of moisture; as, the soil is naturally so porous, that nearly all the plants seemed to be flagging. Several new varieties were examined; the only one which received an Award was Laxton's Bernard. The fruits are of middle size, distinctly plum-shaped, rich in colour, and of excellent flavour. It is evidently a good cropper. This received an Award of Merit. Thos. Carlyle (Laxton) was a high-flavoured variety; but the present season's crop, from the causes named, was not good enough to entitle the variety to an Award. Several excellent breadths of Cabbage and Cos Lettuces were seen. An Award of Merit was given to Crystal Palace, a curled and firm-hearted Cabbage Lettuce. No other award was made; but amongst others, the stock of Hicks' Hardy White Cos was much admired.

Peas were the worst lot seen here at any time; growth has been singularly bad, although the ground had been deeply worked and manured, and the sowings were thin. The statement of the President at the luncheon, that the garden seemed to be worn out, so far as certain produce was concerned, is well sustained by the appearance of the Peas this season; but it seems probable that a very special cause of the indifferent growth of some things is more due to the garden's atmosphere and surroundings than to even the worn nature of the soil. The early Peas only were fit for examination. The best were Dickson's Harbinger, 3 ft., a capital and nice-flavoured variety. An Award of Merit was given to Thos. Laxton, 5 feet high, an early Ne Plus Ultra; also to Drummond's New Pea, 6 feet in height, having a Telephone-like pod, containing sweet, green seeds. Veitch's Acme, 4 feet in height, first early, having medium-sized and well-filled pods, received a similar award; and that previously made to that excellent early variety Gradus was confirmed. It is to be feared that trials of Peas at Chiswick cannot be in future satisfactory, and it would be well if the Council would temporarily hire a few acres of ground in the country where good and satisfactory trials could be ensured.

ISLE OF WIGHT ROSE.

JUNE 20.—The annual exhibition was held in the picturesque grounds of Carisbrooke Castle on Coronation Day. In the open classes, Mr. B. R. CANT, Colchester, was 1st for a collection of twenty-four Roses, distinct varieties; and Messrs. F. CANT & Co. were 2nd. Messrs. F. CANT & Co. were 1st for twelve distinct Teas or Noisettes, for eight distinct varieties in trebles, for twelve blooms of any one variety, and for twelve bunches of garden-Roses. Mr. B. R. CANT secured the Silver Medal for the best Rose of any sort in the show, with Mrs. John Laing; and Mr. J. O. Brook was 1st in the amateurs' class for eighteen Roses, distinct varieties. In the Isle of Wight classes, Mrs. CROFT MURRAY secured the Isle of Wight Silver Challenge Cup for twenty-four distinct Roses. Major O. MOULTON BARRETT obtained the Queen's Gold Medal for twelve distinct Roses, and Mrs. CROFT MURRAY the Silver-gilt Medal for twelve distinct Teas.

NORFOLK AND NORWICH HORTICULTURAL ROSE SHOW.

JUNE 20.—The annual Rose show of the Norfolk and Norwich Horticultural Society was held on the above date in the picturesque Bracondale Woods, lent for the purpose by Mr. RUSSEL J. COLMAN.

Unfortunately for the entire success of what is always anticipated as a very attractive function, the weather was threatening nearly the whole of the day, and showers fell intermittently during the hours when the largest attendance is usually anticipated. The heavy rains of the last few weeks also militated against such an effective display as is generally seen at this show. Though the entries for Roses were quite as numerous as in the previous years, the number actually exhibited was much smaller. In many of the classes no award was made. Such exhibits as there were, however, constituted an attractive though small display.

The deficiency in respect to the Roses—the principal feature, of course, of the show—was amply compensated for by the fine collection of cut-flowers. The Committee had made a special effort to secure a large entry, by offering additional and special prizes, and they were rewarded by an entry that was a great deal better than any of recent years. The tent was a blaze of rich and delicate colours, and though assistance to the general effect was lent by professional exhibitors who did not compete, the Society is to be congratulated upon a very effective collection. This marquee was well patronised all the afternoon, and commanded the principal attention. The display of pot plants was inferior to that of previous years, but there was a fair show of Fuchsias and Pelargoniums.

In the Rose tent, Mr. B. R. CANT secured 1st prize for forty-eight blooms, though with an exhibit much inferior to his usual contribution. Messrs. F. CANT & SON were 2nd, the effect of the weather being especially noticeable on the outer petals.

For thirty-six blooms there was only one exhibitor, Miss PENRICE, of Witton, being awarded 2nd prize. A fine example of La France by this lady was, however, awarded the Medal for the best hybrid perpetual in the show.

In the class for twenty-four blooms, Mr. T. C. BLOFIELD was some way ahead of Col. ROUS.

For eighteen blooms, the Rev. A. FELLOWES was an easy 1st with a very fine lot, most of which belonged to the Tea or hybrid Tea section. One specimen in this collection was awarded the Medal for the Tea-scented class.

For twelve varieties, Mr. E. E. BOURCHIER secured highest honours. In the class for twelve blooms, open to amateurs only, Mrs. W. W. HAMMOND (Eyo), was 1st with some very good blooms, Teas again being well represented.

Messrs. PAUL & SON were 1st for twelve new Roses. Miss PENRICE, with some superb specimens of La France, secured the premier position in that class, and she also scored in the class for twelve Teas.

In the cut-flower tent, the class for hardy herbaceous perennials was a magnificent display; Messrs. BURRELL & Co., of Cambridge, were 1st; Mrs. PETRIE 2nd, and Mr. CHARLES JACOBI, of Ipswich, 3rd. All the usual classes were well filled with more than ordinarily good examples, stalks being strong, and blooms large. One of the principal exhibitors was Mr. R. C. NORCUTT, of Ipswich and Woodbridge, but he did not compete. This stand was one of the features of the tent, being a flame of varied colour, and containing horticultural examples that were as novel as they were attractive.

In this connection, it may be said generally that the show gained much from the liberal exhibits of local and other nurserymen, who helped to make less noticeable the extensive gaps in the competing entries, and furnished delightful collections of floral beauties that did much to redeem what would otherwise have been as a Rose show—something in the nature of a failure. As it was, the show was fairly successful. *Extract from the "East Anglian Times," July 1.*

ISLE OF WIGHT HORTICULTURAL IMPROVEMENT.

JUNE 30.—Over fifty members and friends of the Isle of Wight Horticultural Improvement Association made a visit on the above date to Messrs. Sutton & Sons', of Reading. An inspection was made of the seed-stores, offices, warehouses, trial-grounds, greenhouses, &c. The hospitality extended to the visitors they now desire to acknowledge.

JULY 2.—The monthly meeting was held at Sandown, Mr. T. GIBBS being elected to the chair. The exhibits were numerous, and of first-rate quality, and were thrown open to the public free of charge during the afternoon.

Mr. A. COLE, Broadlands, Sandown, staged a group of miscellaneous flowering and foliage plants, and Mr. J. H. PERKIN, Los Altos, Sandown, staged a group of miscellaneous stove and greenhouse foliage and flowering plants, and a stand of Roses. Messrs. COLE and PERKIN were each awarded a Certificate for their excellent exhibits.

In the evening Mr. W. C. MOSELEY, of Bonchurch, read a paper on "Meteorology in relation to Gardening," which contained some invaluable advice to gardeners on the structure, uses, and management of thermometers, barometers, hygrometers, rain-gauges, and sunshine recorders. Mr. Moseley brought several meteorological instruments, and explained them in detail to a large audience.

Several new members were elected, the total number now being 270.

THE NATIONAL VIOLA.

JULY 2.—This modest society, which was established a few years ago by a few enthusiastic admirers and cultivators of Pansies and Violas, held its exhibition of blooms at the Crystal Palace on Saturday last. This could not be regarded as other than an unfortunate occurrence, seeing the abundant attractions the Rose has for everyone, and Saturday saw the festival of the National Rose Society at the same place.

The ordinary man cannot divide his affections, any more than he can serve two masters, hence the poor little display of the National Viola Society was not much visited, and by many would be passed by unnoticed. This, of course, is very sad, but it is the fate of most gardening fads that appeal to the few—not the many. The Royal Horticultural Society has sympathies wide enough to absorb most, if not all, the special societies; and fellows sufficiently interested in the particular flowers the specialists favour to insure the proper amount of attention being paid them. How poor and mean seems a Pansy when shown in a gigantic building as is the Crystal Palace!—a small tent erected on a cool green lawn, in the shade of fine trees, like the shows of Carnations we have sometimes seen at Chiswick, would be a far more suitable and congenial site.

The exhibits were shown on two tables, placed in front of the orchestra, and here were to be seen the stand of forty-eight sprays of Violas, distinct, set up by Messrs. ISAAC HOUSE & SON, of Westbury-on-Trym, Bristol, which received a 2nd prize only, and the additional award of a Silver Medal. The flowers were disposed in flat, triangular sprays of about a dozen blooms together, on a nearly erect stand, covered with dark-coloured velvet, so the adjuncts were favourable for setting off the colours of the Violas. Pretty varieties were noted in *Admiration*, deep blue with a dark centre; *Isa Fergusson*, dark-purple and deep violet, a telling combination of tints when viewed closely; *Hamish*, bright-purple; *Iona*, light blue, with darker blotches; *A. J. Rowberry*, the well-known yellow self; *Border-witch*, light-blue, and centre white; *Sheelah*, *Magie*, a good form, of rosy-purple tint, &c.

For twenty-four sprays of Violas, distinct, the best came from Mr. M. CAMPBELL, of Blantyre, N.B. These flowers had more substance than the south country blooms, and they were bigger and brighter. We remarked nice blooms of *Butterfly*, the three lower segments white, edged with purple, upper segments also purple; *Lord Salisbury*, a lemon-yellow-coloured bloom; *Dorothy Stokes*, white; *Stobhill Gem*, deep purple and light blue; and *Sissy Mellow*. Messrs. J. CHEAL & SONS, Crawley, took the 2nd place, having *Colleen Bawn*, *The Mearns*, *J. B. Riding*, *Duchess of Fife*, *White Duchess*, *Trentham Purple*, *Sweet Lavender*, &c. Compared with the northern flowers, these lacked substance and size. The 3rd prize fell to Mr. W. BAXTER, of Woking, who showed a pretty stand of self-coloured blooms, *Silver Barr* and *Nellie Barr*, *Endymion*, *Florizelle*, *Magnificent*, and *H. M. Stewart* being the more superior varieties.

Mr. CAMPBELL took 1st for twelve Violas, distinct, shown in glass cups, the varieties being similar to what he had shown in other classes; Messrs. I. HOUSE & SON taking 2nd place.

The best twelve sprays of Violas came from Mr. D. B. CRANE, of Highgate, 1st; and Messrs. I. HOUSE & SON, 2nd. The first-named had good blooms of *Pembroke*, a yellow self; *Devonshire*, creamy-white; *rosea pallida*, and *White Empress*. The 2nd prize winner had *Blue Gown*, *Cooper O'Fogo*, and *Florizelle*.

Mr. BAXTER, Woking, was awarded a First-class Certificate for *Endymion*, a fine yellow self Viola, of perfect outline.

Messrs. I. HOUSE & SON were 1st for twenty-four varieties of Violas, distinct, as shown in specimen glasses. Most of these varieties they had shown in other stands, the exception being *Christiana*, white; *Cissy Thornley*, purple and white; *Blue Cloud*, white, with thin blue edging; *Lady Leah*, *Flower of the Day*, *Acme*, a fine purple self; and *Peggy Smith*, a pleasing red-purple. 2nd, Mrs. C. C. LOWE, Ryhall, Stamford; excellent were *Lady Amory*, of two shades of purple; *Archie Grant*, *True Blue*, and *Bullion*.

The best twelve sprays of Violas, six blooms each, distinct varieties, were shown by Mr. D. B. CRANE; and in another class for six sprays, Mr. LEONARD BROWN was the exhibitor of the best flowers. In this lot were Mrs. C. F. GORDON, blue and white, very pretty; and Mrs. W. GREENWOOD, a yellow self of much merit. There were a few minor classes for Violas shown as sprays in glasses. Mr. D. B. CRANE was awarded a 2nd prize for six sprays of rayless varieties of Violas, showing *Devonshire Cream*, *Mary Scott*, *Pembroke*, *White Empress*, *Florizelle*, and another.

In a class for Violas having blooms not exceeding 1½ inch in diameter, Mr. L. BROWN won with *Bessie*, *Canary Bird*, and *Violetta*.

The Pansies.—Forty-eight sprays distinct, Mr. M. CAMPBELL of Blantyre, naturally came to the front with his fine large blooms of much substance, and appearing in all the beauty of tints we are accustomed to observe in Scottish Pansies. The finest blooms were J. B. IRVINE, John Menzies, D. RUSSEL, M. A. SCOTT, Mrs. W. STEELE, Jno. LAWRENCE. Mr. CAMPBELL was likewise 1st for twenty-four Pansies in distinct fancy varieties, among which we noted *Anne Ross*, *Sir J. Watson*, *Mrs. W. Watson*, *Marmion*, *D. Morrison*, *D. C. McKay*, and *Maggie Goodlet*; 2nd, Messrs. I. HOUSE & SON, in this instance the flowers were but little inferior to those from Scotland.

The finest twelve varieties of fancy Pansies were shown by Mr. CAMPBELL, amongst which were noticed extra good flowers of *G. Sprout*, *Col. Buchanan*, *Mrs. R. Stewart*,

B. Doulton, J. Menzies, and D. Johnstone. Messrs. HOUSE & SON took the 2nd position.

The best six distinct varieties of Pansies were shown by Mr. B. G. SINCLAIR, a London cultivator, consisting of nice examples of Ardwell Gem, Masterpiece, Norah May, Grace Blathorne, Countess of Kintore, and Lady Isabel.

Table decorations, in which Pansies and Violas formed the major portion, were not numerous, and most of them erred on the side of an undue use of the flowers, to the lamentable exclusion of greenery as a foil to colour in the former. The prettiest device was quite a small one, consisting chiefly of pale blue Violas, sparingly used, Smilax (Myrsiphyllum) and Maidenhair Fern. The chief exhibitor, if not the only one, was Mr. W. SYDENHAM, of Tamworth. This exhibitor obtained the National Viola Society's Gold Medal for an exhibit consisting of a large stand of Viola sprays, forty-eight in all.

THE SCOTTISH HORTICULTURAL ASSOCIATION.

JUNE 25.—A good muster of members proceeded to the Redbraes Nurseries on Saturday, June 25, on the invitation of Mr. J. Grieve, to spend an evening among his Violas. The President, Mr. TODD, and many others, were present.

There was a very general consensus of opinion that, if you want to see the finest Violas in their most perfect form, you must see them growing in lines, beds, or borders in such a nursery as that of Messrs. J. Grieve & Sons. Here each variety, though repeating its merits or revealing its defects, renders either more apparent or pronounced, and few could carefully scan over 100 or more varieties of the best Violas without having learned a good deal more concerning them.

In addition to a large collection of named varieties, there are many hundreds of seedlings, and these have to satisfy the exigent owner of the nursery before they are honoured by a name. The "Father of Violas," as Mr. Grieve is very properly called, while cognisant of the merits of a flower, is also severe as a judge, and quick to discover blemishes and shortcomings. I cannot mention many names of varieties, but would only say that Joseph still maintains its popularity, and that Peter Barr, which hardly looks as if it were firmly and finally fixed in colour and quality, promises to become a rich and delicate flower. Raisers are hardly likely to be oblivious to the demand that is springing up in various directions for earlier and later-blooming Violas, with a more perpetual habit of flowering than our present race exhibits. We all recognise the influence for good or evil of soil and site, and of good methods of culture, on the development of the plants, and the fixing of all sorts of admirable qualities. Still, it seems quite possible to raise varieties of the Viola specially for early, late, and continuous blooming.

An inspection of the Violas absorbed most of the evening, although the visitors had time to note the large numbers of Carnations, Pinks, hardy herbaceous plants, Sweet Peas, Dahlias, &c., grown. Indoors, Tomatoes, Ferns, Palms, fine-foilage, furnishing and bedding plants, &c., were everywhere. I noted here, as elsewhere, that Pelargoniums are once more in the running among fashionable bedding and furnishing plants.

Mr. TODD conveyed the warmest thanks of the Association to Mr. GRIEVE for his genial and hospitable reception, happily comparing his position at Redbraes with Violas to the right of him, and Violas to the left of him, Violas in front, and Violas behind, to the Russian cannon converging on the fated Light Brigade at Balaclava. Mr. GRIEVE replied with a hearty welcome.

Mr. TODD brought an interesting exhibit to the meeting, a bunch of Sweet Peas, cut from his own garden in the open air at Musselburgh. They were sown in heat early in February, and planted out at the end of the month of May, staked at once, this staking being their sole protection. The flowers were as clean and spotless as if they had been grown under glass this cold late summer.

JULY 5.—An interesting meeting of the Society was held at 5, St. Andrew Square on the above date, Mr. M. TODD, the President, in the chair.

Among the exhibits shown were some fine blooms of the white and pink Souvenir de la Malmaison Carnations, shown by Mr. RUTHERFORD, Bridge of Allan, which were said by those who were present to equal any that were staged at the Royal Horticultural Society's Temple Show. A Cultural Certificate was awarded.

Also a collection of seedling Carnations by Mr. JOHN MINTY, Riverdene, Cookham, Berks, among which a white variety of great promise, named Nethridge, secured a First-class Certificate.

There was also an interesting collection of some hardy plants shown, including a double white and a semi-double white Clematis. The all too seldom seen—in the North—Buddleia globosa, the very pretty semi-Hawthorn-scented, white-flowering shrub—all too seldom seen in ferneries, rock-work, or the front row of shrubberies, Helichrysum rosmarinifolium—perhaps more generally known as Ozothamnus rosmarinifolium, a pretty name for this bright New Zealand shrub—which is considered to be scarcely hardy in Scotland. But here was a fine spike from a garden near Edinburgh, in full blossom, on the 5th of July.

In the absence of Mr. J. MCINTYRE, of Woodside Gardens, Darlington, the assistant secretary, Mr. G. H. MURRAY, read his paper on "Crotons."

Mr. FISH praised the brevity and lucidity of Mr. MCINTYRE's paper, in most of which he agreed, and made a few remarks on the change of names from Crotons to Codiaeums.

Mr. TODD, in moving a vote of thanks to Mr. MCINTYRE, referred to his experience of Crotons, in selling them, and how soon he found them become deciduous plants in his hands; and called upon Mr. THOMSON, as Director of the Royal Caledonian Horticultural Society, to give his impression of the first great Temple Show he had attended in London. This gentleman apologised for attempting to do what already had been so well and fully done by the Horticultural Press. He began by praising the place, which he described as grand. The fine crowded tents for a three days' show. The third point that seemed to have struck Mr. THOMSON most was that there were no money prizes offered or given, but nearly 100 awards in the form of gold and silver cups, medals, and certificates.

Then the Roses, Orchids, Fruits, Cacti, Rockeries, Cut Flowers, and the past, as it were, reappearing with the present, through several exhibits of hard-wooded plants, prominent among which were several of Leschenaultia biloba major, L. violacea, L. formosa. On the whole, the great show struck Mr. THOMSON as being singularly free from rubbish, and he hoped soon to see another—and, perhaps, a fruit show—at the Crystal Palace.

After a hearty vote of thanks to Mr. THOMSON and the President, it was announced that the Strawberry meet of the Association would be on Wednesday, July 20th, at 6 p.m., and the business meeting at 7.30—both at 5, St. Andrew Square. D. T. F.

WARGRAVE AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

JUNE 29.—An ordinary monthly meeting of the above Society was held on the above date in the Parish Room, Wargrave, Mr. W. POPE presiding.

Mr. T. HASKETT, gr. to J. W. RHODES, Esq., Hennerton, read a capital paper on "Roses." He referred specially to hybrid perpetuals and Teas, and advised intending Rose-growers to visit a good nursery in June or July to inspect the stock, when the various kinds and colours could be noted and chosen. A second way of obtaining good Roses was to propagate one's own by budding, grafting, or cuttings. The soil, method, and time of pruning, Rose-pests and their remedies, were in turn taken up, and a most profitable discussion afterwards took place, many members detailing their experience.

Mr. W. POPE, gr. to J. P. WHITE, Esq., of The Willows, was awarded a Certificate of Cultural Merit for a fine group of seedling Streptocarpus.

WITHAM HORTICULTURAL.

JUNE 28.—The second Annual Show of the Witham Horticultural Society was held in The Park, Witham, on the above-mentioned date in beautiful weather. The Committee, and Dr. Scott, the courteous Hon. Secretary, are to be complimented upon the excellent arrangements, and the success which attended their efforts to make the Show a success.

Cut-flowers were well shown in the open classes by Messrs. D. PRIOR & SON, Messrs. WALLACE & CO., both of Colchester, and Mr. S. KERRY, gr. to C. W. PARKER, Esq., Hatfield Priory, Witham, who took the prizes in the order in which their names appear for twenty-four varieties of hardy herbaceous flowers, which were well chosen and set-up in glasses. Mr. B. R. CANT, Colchester, was easily first for thirty-six Roses, distinct. Mr. H. GODFREY, gr. to Lord RAYDELIGH, was 1st for eighteen Roses; Lady DUCANE securing 1st honours for a good stand of twelve varieties of herbaceous flowers; being closely followed by Mr. S. KERRY, who was also 1st for six of Gloxinias, staging well-grown and evenly-flowered plants, and for a stand of twelve bunches of stove and greenhouse flowers, as well as for a collection of six kinds of vegetables, artistically arranged in a shallow circular basket, and which arrangement secured for Mr. KERRY special recognition, in addition to money prize offered for the produce so tastefully set up, as an inducement to other exhibitors to follow the example thus set them at future shows. The vegetables consisted of fine, even, clean tubers of Veitch's Ashleaf Kidney Potatoes, six weeks' Turnip, Carter's Perfection Tomato, Exonian Peas, Model Carrots, and Purple Artichokes.

Table decorations, button-holes, and sprays made a fine show in themselves, the flowers selected and the arrangement of same being everything that could be desired. H. W. W.

EDINBURGH FIELD NATURALISTS' AND MICROSCOPICAL.

JUNE 29.—The members of this Society paid a visit last week (Wednesday) to the Mushroom-beds in Scotland-Street Tunnel, Edinburgh.

The various features in connection with the method of Mushroom culture here were examined. The mycelium or spawn is supplied by a firm in London, embedded in small cakes composed of earth and manure, and the subsequent rapid increase of the spawn was noted with much interest. The tunnel, which was first used for its present purpose in 1887, after having been abandoned for twenty years by the railway company, is about three-quarters of a mile in length, and contains about 800 beds, each measuring 12 feet by 3 feet. On the beds Mushrooms at all stages of growth were seen, from the tiny button to the size most suitable for the market, and which requires about a month to reach maturity. Only the common Mush-

room (*Agaricus campestris*) is grown, and of it 5,000 lb. have been produced in a month. The Mushrooms are here raised under the most favourable conditions, and the greatest facilities are also afforded for their speedy transit by rail. Thus it was remarked that the Mushrooms partaken of at breakfast in London, had probably been ordered and despatched from Edinburgh the previous evening. Ten years ago Mushrooms were imported from France in quantities, and although the demand for them has now greatly increased, their importation has considerably diminished. This has come about to some extent on account of the large and constant supply from the Mushroom beds in Scotland-Street Tunnel, 60 feet under the pavement of a large city.

On the Saturday following (July 2) the society had an entomological excursion to Dalmeny Park, special attention being given to the Diptera, or two-winged flies, and a number of interesting specimens was collected. The captures in other orders of insects included a common blue butterfly, *Lycæna icarus*, an interesting species of brachelytrous beetle, found in a decaying tree-trunk, two species of humble-bee, one solitary bee (*Andrena*), two species of lace-wing fly (*Chrysopa*), &c. All the orders of insects were represented among the specimens collected.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JUNE 30.—At the last meeting of this Society at the Coal Exchange, Manchester, there were present Messrs. W. THOMPSON (in the chair), Shorland Ball, Hodgkinson, Greenwood, Leemann, Bolton, Backhouse, Cypher, Stevens, Johnson, and Mills (Hon. Sec.).

D. B. RAPPA, Esq., Liscard (gr. Mr. Nicholson), showed a very fine plant of *Cattleya Gaskelliana alba*, which was awarded a First-class Certificate. S. GRATRUX, Esq., Whalley Range (gr. Mr. McLeod), showed *Cattleya Wagneri*, with small flower, which the committee expressed a desire to see again when stronger; C. M. REINECKIANA (Award of Merit), and *Lælia tenebrosa*, with excellent dark lip, but a little weak in sepals and petals (Award of Merit). Mrs. BRIGGS-BURY, Accrington (gr. Mr. Wilkinson), showed *Lælia-Cattleya Fire King*, a magnificent form (First-class Certificate); *Cypripedium Gertrude Hollington*, one of the largest flowers we have seen of this variety (First-class Certificate); and *Odontoglossum crispum Marianne* (Award of Merit). O. O. WRIGLEY, Esq., Bury (gr. Mr. Rogers), showed *Cypripedium bellatulum album* (First-class Certificate). J. LEEMANN, Esq., Heaton Mersey (gr. Mr. Edge), showed *Lælia-Cattleya Arnoldiana*, very fine (First-class Certificate); *Odontoglossum Pescatorei album* (Award of Merit); *Cattleya Mendeli*, O. crispum, *Cypripedium T. W. Bond*, C. bellatulum, C. Hookeri Volanteum, and *Lælia grandis tenebrosa*. THOMAS STATTER, Esq., Whitefield (gr. Mr. Johnson), showed a very good form of *Cypripedium Conco-bellatulum* (Award of Merit), and *Lælia stilata* (*harpophylla* × *tenebrosa*).

WM. BOLTON, Esq., Warrington (gr. Mr. Cain), showed *Lælia tenebrosa*, *Cattleya gigas gigantea*, very fine flower (Award of Merit); *Cattleya Mossiae*, and *Cattleya species*, a very curious mottled flower in the way of Mossiae. The same exhibitor also showed two plants of *Odontoglossum crispum*, spotted varieties, one of which obtained an Award of Merit. W. H. ALMOND, Esq., Blackburn (gr. Mr. Hurst), showed *Cattleya Mossiae* and C. M. Ernesti. Mr. THOMAS HOLDEN, Royton, showed *Cattleya Mendeli*; Mr. JAMES CYPHER, Cheltenham, showed *Cattleya Mossiae delicatissima* (Award of Merit), C. Warneri, a very good dark form; *Thunia Winniana* (Award of Merit), *Odontoglossum maculatum* × *cordatum* (Award of Merit), and *Dendrobium Bensone majus*.

NATIONAL ROSE.

JULY 2.—The annual Metropolitan Exhibition of the National Rose Society was held on the above date, in glorious weather, at the Crystal Palace. The quality of the blooms was much better than it was feared a month ago would be the case, and generally the display was a very satisfactory one. On this occasion the nave was again available, and in this and the central transept were arranged the stands.

Mr. E. B. LINDSKILL won the Amateur's Champion Trophy, Mr. HILL GRAY the Amateur's Trophy for Teas, and Mr. B. R. CANT the Nurseryman's Champion Trophy for the best seventy-two blooms.

NURSERYMEN.

Seventy-two blooms, distinct varieties.—The Champion Trophy and 1st prize was won by Mr. B. R. CANT, of Colchester, with a capital collection. His varieties were Ulrich Brunner (very large), Cleopatra (very pretty bloom), Alfred Colomb, Marie Finger, Marquise de Litta, Madame Jules Finger, Gustave Piganeau, Caroline Testout, Heinrich Schultzeiss, La France, Duke of Edinburgh (large, good bloom, of much substance), White Lady, Comtesse de Ludre, Catherine Mermet, Dr. Andry, Mrs. John Laing, Horace Vermet, Madame Gabrielle Luizet, Thomas Mills (good), Mrs. Sharman Crawford, Marie Baumann, Lady Mary Fitzwilliam, Comte de Raimbaud, Mrs. W. J. Grant. Second row: Souvenir de la Malmaison, Magna Charta, Maréchal Niel, Madame Victor Verdier, Monsieur Noman, Madame Cusin, K. A. Victoria, Captain Hayward (capital), Mrs. Paul, Chas. Lefebvre, Hon. Edith Gifford, Sénateur Vaisse, Marchioness of Dufferin, Le Havre, Ernest Metz, Helen Keller, Innocente Pirola, Dupuy Jamain, Souvenir d'Elise Vardon, General Jacqueminot, Medea, Suzanne-Marie Rodocanachi, The Bride, and Crown

Prince. Third row : Salamander, Marchioness of Downshire, Auguste Rigotard (good), Souvenir d'un Ami, Marie Verdier, Golden Gate, Earl of Dufferin, Muriel Grahame, Abel Carrière, Bridesmaid, Annie Laxton, Maman Cochet, Ed. André, Madame de Watteville, Prince Arthur, Margaret Dickson (very fine), A. K. Williams, Madame Cadeau Camey, Madame Delville, Madame Bravy, Et. Levét, Merveille de Lyon, Dr. Sewell (good), and Souvenir de S. A. Prince. There were four other exhibitors, and of these Messrs. F. CANT & Co. were adjudged 2nd; Ulrich Brunner, Madame Victor Verdier, Dr. Andry, Captain Hayward, Madame Gabrielle Luizet, Marquise Litta, Marie Baumann, Margaret Dickson, Le Havre, J. D. Pawle, Mrs. Jno. Laing, and Countess Folkestone, were excellent blooms in this stand. Messrs. HARKNESS & SONS, Bedale, who won premier honours in this class in 1896 and 1897, were 3rd this season.

Forty distinct varieties (trebles).—Mr. B. R. CANT won again in this class, the varieties most contributing to this effect being La France, Mrs. John Laing, Marquise Litta, Souvenir de S. A. Prince, Madame Gabrielle Luizet, Prince Arthur, La Fraicheur, Suzanne-Marie Rodocanachi, Mrs. Sharman Crawford, Golden Gate, Mrs. W. J. Grant, Duke of Edinburgh, Marie Baumann, Caroline Testout, and Ulrich Brunner. Messrs. A. DICKSON & SONS, Newtownards, were 2nd, and their Roses, though smaller generally, were even and good specimens. It contained the new Rose, Mrs. Morrow, a bloom of distinct shade and pretty form, and Mrs. Bessie Brown, another new one. There were fine blooms of Mrs. Sharman Crawford, and of Mrs. E. Mawley, a new Rose of very peculiar tint. Messrs. F. CANT & Co. took 3rd prize, and won it from Mr. GEO. MOUNT, Messrs. G. PAUL & SON, and Messrs. HARKNESS & SON.

Forty-eight blooms, distinct varieties.—Messrs. D. PRIOR & SONS were the victors in this struggle, and the collection of flowers was a creditable one. The varieties in the exhibit were—Prince Arthur, Caroline Testout, Ulrich Brunner, Margaret Dickson (very fine), Marquise Litta, Marquis of Dufferin, Helen Keller, Mrs. Sharman Crawford, Gustave Piganeau, White Lady (good), Dupuy Jamain, Mrs. W. J. Grant, Chas. Darwin, Mrs. John Laing, Duke of Edinburgh, La France (good bloom). 2nd row: K. A. Victoria, Abel Carrière, The Bride, Etienne Levét, Madame Luizet, Comte Raimbaud, Souvenir de S. A. Prince, A. K. Williams (exceedingly bright), Magna Charta, Dr. Andry, Caroline Kuster, Prosper Laugier, Alba Rosea, Prince Camille de Rohan, and an extra class bloom of Marie Baumann. 3rd row: Fisher Holmes, Marie Verdier, Alfred Colomb, Souvenir d'un Ami, Duke of Fife, Margaret Dickson, Ed. Andry, Marchioness of Downshire, Beauty of Waltham, Souvenir d'Elise Vardon, Horace Vernet, Cleopatra, Duke of Wellington, Marie Van Houtte, E. Y. Teas, and Lady M. Fitzwilliam. Messrs. TOWNSEND & SON, Lower Broadmeath, Worcester, were 2nd with a collection that, judged at a glance, would probably have been placed 1st. Extra-sized specimens there were of Caroline Testout, Gustave Piganeau, Etienne Levét, Suzanne-M. Rodocanachi, Devoniensis, Madame de Watteville, Madame Gabrielle Luizet, Ulrich Brunner, Heinrich Schultze, Duke of Edinburgh, Fisher Holmes, and Jeannie Dickson. Messrs. BURRELL & Co., Cambridge, won 3rd prize from Mr. JOHN MATTOCK.

Twenty-four blooms, distinct varieties.—From six other competitors Mr. CHAS. TURNER, Royal Nurseries, Slough, won 1st prize in this class. His blooms were of capital quality, even in size, of satisfactory substance, fresh and bright in appearance, and an easy 1st. His flowers were Caroline Testout, Chas. Lefebvre, General Jacqueminot, Ulrich Brunner, Mrs. Sharman Crawford, Gustave Piganeau, Pride of Waltham, Beauty of Waltham, Etienne Levét, Dupuy Jamain, Madame Victor Verdier, Madame G. Luizet, Duke of Edinburgh, Chas. Lamb, Duke of Wellington, La France, Duchess of Bedford, Helen Keller, Prince Arthur, Marie Baumann, Duke of Teck, Mrs. J. Laing, R. A. Victoria, and Reynolds Hole. The 2nd prize collection happened to be in the next box, and was from Mr. G. PRINCE, Oxford, consequently the lovely Teas played a conspicuous part in the exhibit. Really excellent were Sylph, The Bride, Princess of Wales, Jean Ducher, Mme. Hoste, Muriel Grahame, Marchioness of Downshire, and Maréchal Niel; 3rd, Messrs. COOLING & SONS, Bath.

Twenty-four Trebles, distinct varieties.—Messrs. D. PRIOR & SONS, Colchester, won this class with very even, bright flowers, of much substance. Particularly good were Mrs. W. J. Grant, Marie Baumann, Magna Charta, Mme. Gabrielle Luizet, A. K. Williams, La France, Prince Camille de Rohan, Marquise Litta, Mrs. John Laing, and Duke of Edinburgh. The 2nd prize was taken by Mr. GEO. PRINCE, Oxford, and the Teas again were conspicuous; Madame Hoste, Souvenir de S. A. Prince, Princess of Wales, Captain Hayward, Golden Gate, Rubens, Comtesse de Nadaillac, and Bridesmaid were the best blooms. Mr. CHAS. TURNER was 3rd, and there were two other exhibitors in the class.

Twelve blooms distinct (Dickson Cup class).—1st, 2nd, and 3rd prizes were offered by Messrs. A. DICKSON & SONS for the best dozen varieties (single blooms) sent out by this firm from the Newtownards nurseries. In this class, singularly enough, the 1st prize was won by the donors of the prize, there being four other collections. The varieties were Mrs. Sharman Crawford, Helen Keller, Mrs. W. J. Grant, Tom Wood, Robert Duncan, Jeannie Dickson, Countess of Caledon, Marchioness of Dufferin, Killarney, Ards Rover, Muriel Grahame, and Daisy. Messrs. F. CANT & Co. were 2nd, and showed, among others, Mrs. W. J. Grant, Margaret Dickson, Lady Helen Stewart, and Mrs. Jas. Wilson. Mr. B. R. CANT took 3rd prize.

Twelve distinct varieties, seven trusses of each.—These blooms were to be staged in twelve vases or receptacles other than boxes. Mr. J. MATTOCK, of Oxford, showed well. Some of the varieties, especially the Teas, had to be wired; others were perfectly erect without such support. The effect was decidedly pretty, but the exhibitor should have plainly labelled the varieties. Messrs. PAUL & SON, Cheshunt, were 2nd, and Mr. GEO. PRINCE, of Oxford, 3rd.

TEAS AND NOISETTES.

Twenty-four blooms, distinct varieties.—Teas and Noisettes generally, were of considerable size and substance. Some of them by reason of the occasional rains and winds, lacked refinement. There were four exhibits in this class, and the 1st prize went to Mr. GEO. PRINCE, Oxford. His varieties were Comtesse de Nadaillac (Medal bloom), Souvenir de S. A. Prince, Madame de Watteville (a very pretty bloom), Innocente Pirola, Maréchal Niel, Rubens, Mrs. Pierrepont Morgan, a new Rose in the way of Madame Cusin, but lighter. Cleopatra, Anna Olivier, Ernest Metz, Francisca Kruger, The Pride, Maman Cochet, Marie Van Houtte, Princess of Wales, Hon. Edith Gifford, Amazone, Madame Hoste, Catherine Mermet, Monsieur "Furtado," Souvenir d'un Ami, Muriel Grahame, Princess Beatrice, Golden Gate (very good). 2nd, Messrs. PRIOR & SON, Colchester, who also showed very well, and Ernest Metz, Maman Cochet, Cleopatra, Souvenir de S. A. Prince, and Catherine Mermet, may be specially mentioned as fine blooms. Mr. B. R. CANT beat Messrs. CANT & Co. for 3rd place.

Twelve blooms, distinct varieties.—Mr. J. MATTOCK led in this class, and showed some good blooms, but there were no names attached to them. Messrs. BURRELL & Co., Cambridge, who were 2nd, showed fairly well; and Messrs. TOWNSEND & SONS, Worcester, beat the other exhibitors for 3rd place.

Eighteen distinct varieties (trebles).—This class made a really beautiful display, and the 1st prize was secured by Mr. G. PRINCE, Oxford. He had Comtesse de Nadaillac (very fine), Souvenir de S. A. Prince, Souvenir d'un Ami, The Bride, Innocente Pirola, Luciole, Souvenir d'Elise Vardon, Catherine Mermet, Cleopatra, Madame Cusin, Princess of Wales, Rubens (capital), Maréchal Niel, Ernest Metz (very good), Medea, Bridesmaid (a beautiful colour), Marie Van Houtte, and Devoniensis. Messrs. PRIOR & SON, Colchester also showed very finely, their exhibit being composed of very pretty even blooms. Messrs. F. CANT & Co. beat Mr. J. MATTOCK for 3rd place.

GARDEN OR DECORATIVE ROSES.

The date of the metropolitan show was exactly suitable to the pretty Roses of this section.

Twenty-six distinct varieties, not fewer than three trusses of each.—Messrs. PAUL & SON, Cheshunt, were 1st in this class, which, as usual, made a gorgeous display of colour, and the sprays were made up with fine taste and finish. Some of the best varieties were Amy Robart, a large, single, rose-coloured variety; Dawn, an extra large, warm-coloured, new Rose, exhibited at the Palace last year; Camoens, a very pretty Rose when about half open; Marquis of Salisbury, deep crimson, semi-double Rose; Alba, a large single, pure white flower; Janet's Pride, one of the prettiest of the Sweet Briars; Crimson Rambler, Morlett, Paquerette, a white button-hole Rose; L'Idéal, a very distinct bronzy-red Rose; Royal Scarlet, a new single Rose, of exceeding bright scarlet; Rugosa fimbriata; Una, a new large, single, cream-flowered hybrid; Polyantha Perle d'Or, and several Moss Roses. Messrs. J. COOLING & SON, Bath, who always exhibit these charming garden Roses finely, were 2nd, with a beautiful lot, in which the varieties were slightly different, but not greatly less showy.

Eighteen distinct varieties, not fewer than three trusses of each, were best from Mr. J. MATTOCK, and in his selection of varieties secured a fair representation of the various sections. The best were Janet's Pride, Ma Capucine, W. A. Richardson, Madame Falcot, &c. Mr. C. TURNER was capital as 2nd prize exhibitor, making a specialty of the Moss Roses.

Twelve distinct varieties of single-flowered Roses in trusses of not fewer than three blooms.—Messrs. G. COOLING & SON, Bath, won this class, and the exhibit was exceedingly attractive. The varieties were Rugosa alba, Yellow Austrian Briar, humilus x rugosa, Andersoni, macrantha, Paul's Single White, Himalaica, pisocarpa, Lucy Ashton, Cooling's Single Crimson Bedder, and villosa nivea. Messrs. PAUL & SONS, Cheshunt, showed well for 2nd prize.

Button-hole Roses.—The best exhibit of nine distinct varieties of Roses suitable for button-holes, to be shown in vases, was from Mr. GEO. PRINCE. These were very pretty indeed, and scarcely less so was a collection from Mr. J. MATTOCK.

Sprays of Roses.—These were made tastefully, and were suitable for ladies' wear. Mr. O. G. ORPEN, Colchester, won 1st prize, and Mr. GEO. PRINCE was 2nd.

OPEN CLASSES.

Twelve blooms of Hybrid Teas distinct.—Mr. B. R. CANT won 1st honours in the class, staging the following varieties, La France, White Lady, Mrs. W. J. Grant (a very bright handsome bloom of this distinct variety), K. A. Victoria, Lady M. Fitzwilliam, Duchess of Albany, Antoine Rivoire, Catherine Testout, Souvenir de President Carnot, La Fraicheur, Clara Watson, and Marquise Litta, the colour of which was exceedingly bright. Messrs. J. PRIOR & SON, who were 2nd, had very fine blooms of La Fraicheur, Countess of Caledon, and Mrs. W. J. Grant. Messrs. F. CANT & Co. took 3rd prize.

Twelve blooms of any Yellow Rose.—Maria van Houtte, shown by Messrs. PRIOR & SON, Colchester, was awarded 1st prize in this class, and the quality of these blooms was very good. Mr. G. PRINCE was 2nd, with excellent Maréchal Niel; and Messrs. A. DICKSON & SONS, Newtownards, 3rd, with Marie van Houtte. There were seven competitors.

Twelve blooms of any white Rose.—The 1st prize in this class went to Mr. G. PRINCE, Oxford, for an exhibit of Souvenir de S. A. Prince, the blooms being of good size, but disfigured slightly by rain. Mr. B. R. CANT, of Colchester, followed with pretty blooms of Margaret Dickson; and The Bride, shown by A. H. GRAY, Esq., Beaulieu, Bath, was 3rd. There were twelve exhibitors.

Twelve blooms of any light or dark crimson Rose.—Mr. C. TURNER, Slough, was a fine 1st here, with a dozen highly-coloured substantial blooms of Ulrich Brunner. There were ten competitors. Messrs. TOWNSEND & SONS were 2nd with good Gustave Piganeau; and Messrs. HARKNESS & SONS were 3rd with Horace Vernet.

Twelve blooms of any light pink or rose-coloured Rose.—Mr. B. R. CANT won with twelve blooms of Mrs. W. J. Grant, exhibiting splendid colour, and some of them of capital quality. The same variety secured 2nd prize for Messrs. ALEXANDER DICKSON & SON; and Mr. C. TURNER, with a collection of blooms of the variety Mrs. John Laing, was 3rd. There were ten other collections.

Twelve blooms of any Tea or Noisette.—Mr. G. PRINCE showed marvellously well-coloured blooms of Comtesse de Nadaillac, not lacking in size. Rubens, shown by Messrs. TOWNSEND & SONS, were 2nd (rather small); and Messrs. PRIOR & SON, who showed the same variety, were 3rd. There were ten competitors.

NEW ROSES.

Mr. B. R. CANT won with Mrs. W. J. Grant, being the best dozen of this variety in the show; Messrs. A. DICKSON & SONS followed, with Ulster; and Rev. Alan Cheales, from Messrs. PAUL & SONS, Cheshunt, was 3rd.

Twelve blooms of new Roses, distinct varieties.—Mr. B. R. CANT was again 1st, choosing for exhibition the following varieties:—Mavourneen, Beauté Lyonnaise, Mrs. W. J. Grant, Mrs. Rumsey, Helen Keller, Souvenir de President Carnot, Empress Alexandra (poor bloom), Madame Cadeau Ramey, Tom Wood, Antoine Rivoire, Marguerite Appert, and Souvenir de Jeanne Cabaud; Messrs. A. DICKSON & SONS were 2nd, and included a capital bloom of Mrs. Mawley, which in this case was peculiarly pretty in tint, also one of Mrs. W. J. Grant; Messrs. PAUL & SON, Cheshunt, were 3rd.

Three trusses of any new seedling Rose or distinct sport.—Messrs. COOLING & SONS, Bath, were fortunate enough to secure the National Rose Society's Gold Medal for a new white hybrid Tea Rose named Purity, which gained a card of commendation at the Portsmouth show last year. At first glance it would appear pure white, but looking into the bud there is a very faint blush. Messrs. PAUL & SONS showed their hybrid Rose Una in this class. It is a large single-flowered variety, with pale cream or white flowers. Mr. GEO. PRINCE, of Oxford, exhibited in this class a sport from L'Idéal, of distinct shade of colour, and named Jubilation.

MEDAL ROSES.

The best bloom of a Tea or Noisette was of the same variety in the amateur's as in the nurserymen's section. This was Comtesse de Nadaillac, in the amateur's class, shown by A. HILL GRAY, Esq.; and in the nurserymen's by that excellent cultivator of Tea and Noisette Roses, Mr. GEO. PRINCE. The best bloom of a H.T. was a good one of White Lady, in the amateur's section, from Mr. C. J. GRAHAME; and of Mrs. W. J. Grant, in the nurserymen's classes, from Mr. B. CANT. Mr. E. B. LINDSELL had the medal for the best H.P., for a bloom of Mrs. Jno. Laing; and a large bloom of Gustave Piganeau, shown by Messrs. W. J. TOWNSEND & SON, was the best bloom in the nurserymen's classes.

AMATEURS.

The competition in this section was well contested generally, many of the blooms showing great excellence, though in some classes it must be admitted that the season has somewhat militated against the full development and perfection of the flowers.

In the class for thirty-six blooms, distinct varieties, open to all Amateurs, some six competitors entered the lists, the premier award falling to E. B. LINDSELL, Esq., Bearton, Hitchin, in whose stand were good blooms of Ulrich Brunner, S.-M. Rodocanachi, Beauty of Waltham, Gustave Piganeau, Captain Hayward, Mrs. Grant (in excellent condition), Charles Turner, Madame Cusin, Comte Raimbaud, Duke of Wellington, Xavier Olibo, Ernest Metz, and Dupuy Jamain. The 2nd prize fell to the Rev. J. H. PEMBERTON, whose stand was but slightly inferior, good blooms being shown of Marie Baumann, full, and of fine form; La France, Helen Keller, beautiful in form and bright in colour; Mrs. Sharman Crawford, a fine, bold, rosy pink; Prince Arthur, Gustave Piganeau, Charles Lefebvre, large, and of good colour; General Jacqueminot, and Mrs. John Laing. The 3rd was awarded to S. P. BUDD, Esq., Gay Street, Bath, who had some excellent blooms, and several that were altogether deficient in good quality. Among his best were Alfred Colomb, Dupuy Jamain, A. K. Williams (superb in colour and fine in form), Marie Baumann, and Captain Christy.

In the Class for twenty-four blooms distinct, open only to those who have not won the Champion Challenge Trophy within the last ten years, the competition was keen, and good blooms were apparent in most of the stands; the 1st prize was won

by F. W. FLIGHT, whose blooms were of good quality, throughout, even and showy. Among the most prominent were White Lady, Ulrich Brunner (rich and full), Margaret Dickson, Charles Salter, Jeannie Dickson (large and clear), Etienne Levet, La France, Captain Hayward, Mrs. J. Laing, Duke of Wellington, Lady Mary Fitzwilliam, Helen Keller, and A. K. Williams; the 2nd was taken by R. E. WEST, Esq., Reigate, with a very good stand, the blooms being regular in size and very fresh; Captain Hayward, Mrs. Sharman Crawford, Charles Lamb, Etienne Levet, Dupuy Jamain, La France, Charles Lefebvre, A. K. Williams (of a most vivid colour), Comte Raimbaud, and Madame Victor Verdier being amongst the most noticeable ones. A. TATE, Esq., Leatherhead (gr., Mr. W. Mease), came in 3rd, with a very meritorious lot, good blooms being shown of Mrs. W. J. Grant (a bright rosy-pink), Count Raimbaud, Gustave Piganeau, Souvenir d'un Ami, Maurice Bernardin, Madame Gabrielle Luizet, and Souvenir d'Elise Vardon (very fine and full).

In the class for twelve distinct varieties, three blooms of each, E. B. LINDSELL, Esq., was awarded 1st prize, his stand containing very attractive and good flowers, the best being Gustave Piganeau, Beauty of Waltham, Captain Hayward, A. K. Williams, Helen Keller, and S.-M. Rodocanachi. The 2nd was taken by T. B. HAYWARD, Esq., Woodhatch Lodge, Reigate (gr., Mr. T. J. Salter), whose blooms, though somewhat smaller, were fresh and bright; here were remarked Violet Bouyer (a lovely flower), M. E. Y. Teas, Madame Gabrielle Luizet, Madame Hoste (good in colour and form), Charles Lefebvre and Exposition de Brie; the 3rd was awarded to Col. J. H. PITT, Turkey Court, Maidstone, whose blooms of General Jacqueminot, Caroline Testout, and Margaret Jackson were among the best.

In the class for twelve blooms of any Rose except Teas or Noisettes, C. J. GRAHAM, Esq., Wrydland, Leatherhead, was 1st, showing White Lady, a very choice flower of good form and substance; a shade of pale blush, however, was very noticeable in all the flowers. 2nd, E. B. LINDSELL, Esq., with Horace Vernet, whose blooms were large and bright; and S. P. BUDD was 3rd, with Caroline Testout, very large and full.

In the class for eighteen blooms distinct, open to growers of less than 2000 plants.—Eleven stands were put up, and some very good blooms were shown, the premier position was taken by CONWAY JONES, Esq., Hucclecote, Gloucester, whose blooms of Gustave Piganeau, Mrs. W. J. Paul, Tom Wood, Horace Vernet, and Jeannie Dickson were of first-class quality. E. M. BATHURST, Esq., Devine Park, Horsham, was 2nd with a good stand containing fine Camille Bernardin, Duchess of Bedford, Marie Baumann, and Duke of Edinburgh; 3rd, R. E. WEST, Esq., Reigate, whose Xavier Olibo, Duke of Edinburgh, Dupuy Jamain, and Captain Hayward, were the more noticeable blooms.

For three blooms each of eight distinct varieties.—R. E. WEST, Esq., was 1st with Earl Dufferin, Mrs. Sharman Crawford, General Jackson, and Captain, among his best. The 2nd fell to P. G. C. BURNARD, Esq., Reigate, who had a very clean and neat lot. The 3rd going to W. C. ROMAIN, Esq., Windsor.

Five stands were put up for nine blooms of any Rose, except Teas or Noisettes.—Here, E. M. BETHUNE, Denne Park, Horsham (gr., Mr. H. Harris), came well to the fore, showing good blooms of Kaiserin Augusta Victoria; the Rev. HUGH BERNERS, Harkstead Rectory, Ipswich (gr., Mr. Cook), coming 2nd with nice blooms of Margaret Dickson; 3rd being taken by P. G. C. BURNARD, Esq., with Duke of Wellington.

In the class for twelve blooms distinct, open only to growers of fewer than 1000 plants, of the varieties found in the National Rose Society's "Catalogue of Exhibition Roses," including Teas and Noisettes.—There were nine competitive stands. The 1st prize fell to G. MOULES, Esq., Hitchin, Herts, whose collection was very bright and attractive, and good blooms generally, the more prominent ones being Prince Arthur, Duke of Wellington, Caroline Testout, very fine; A. K. Williams, Horace Vernet, Maman Cochet, and Captain Hayward; R. F. HOBBS, Worcester, who came 2nd, showed Heinrich Schultheiss, Charles Lefebvre, Jean Ducher, and La France.

In the class for nine blooms, distinct, open only to growers of fewer than 50 plants, J. C. TRUMAN, Oaklands, Swanley, was awarded the Challenge Cup and 1st place in competition with eight others. Among his best were Charles Lefebvre, Madame Gabrielle Luizet and Maurice Bernardin; 2nd, H. FOSTER, North Street, Ashford, with large blooms, some of them rather over blown. His best were Duke of Edinburgh, Gustave Piganeau, and Annie Olivier. R. W. BOWYER, Esq., Hailbury, was 3rd.

For a stand of six blooms, distinct.—1st, G. A. HAMMOND, Esq., his La France, Dupuy Jamain, S.-M. Rodocanachi, Earl of Dufferin, Margaret Dickson (good), and Victor Hugo being all excellent. 2nd, R. COOK, Esq., Woodthorpe, Stonebridge Park, who had capital and fresh flowers of Margaret Dickson, Kaiserin Augusta Victoria, Gustave Piganeau, Caroline Testout, Mrs. R. Sharman Crawford, and Viscountess Folkestone. W. D. FRESHFIELD, Esq., Reigate, came in 3rd, with a very good lot. There were six competitors.

Twelve blooms, distinct.—In this class, the 1st prize and the Ramsay Cup fell to G. MOULES, Esq., Hitchin. This was a very good class, and good blooms ruled in the winning stands. In the premier stand there were fine flowers of Hon. Edith Gifford, Madame Hoste, Anne Olivier, A. K. Williams, Fisher Holmes, Rubens and Exposition de Brie; 2nd, L. PARRY, Esq., Stamford House, Dorchester, who had Maréchal Niel, Catherine Mermet, Ulrich Brunner, among his most prominent blooms; 3rd fell to E. WILKINS, Esq., Rosedale, Sidcup,

whose stand was very good, having in good form Captain Hayward, Duchess of Bedford, and Dr. Andry. Ten competed.

For triplets, four distinct varieties, eight competed. This was an interesting class, and the 1st prize fell to E. WILKINS, Esq., who had good blooms of Dupuy Jamain, La France, Madame Gabrielle Luizet, and Kaiserin Augusta Victoria; 2nd, M. HODGSON, Esq., Shirley Cottage, Croydon, who showed Dupuy Jamain, Mrs. J. Laing, Gustave Piganeau, and La France. J. H. SCOTT-TUCKER, Headington Vicarage, Oxford, was 3rd, with Anne Olivier, Gustave Piganeau, La France, and Duke of Wellington.

G. W. COOK, Esq., The Briar, Finchley, was 1st for six blooms of any Rose except Teas and Noisettes, showing very fine blooms of Mrs. W. J. Grant. 2nd, L. PARRY, Esq., Dorchester, for good flowers of White Lady; and the 3rd, E. WILKINS, Esq., for Gabrielle Luizet in very fine form.

For twelve blooms, distinct, open to all Amateurs, there were seven contestants, the 1st place being taken by O. G. ORPEN, Esq., Colchester. Good blooms were present in all these stands, and especially noticeable in the premier stand were blooms of Margaret Dickson, A. K. Williams, Lady Mary Fitzwilliam, Kaiserin Augusta Victoria, Souvenir d'Elise Vardon, Catherine Mermet, and Marquis Litta; 2nd, Rev. J. H. PEMBERTON, who had in good form La France, A. K. Williams, Mrs. Sharman Crawford, and Caroline Testout; 3rd, P. G. C. BURNARD, with a good boxful.

Nine distinct, to include not more than four varieties of Teas or Noisettes, seven trusses of each, space occupied by an exhibit not to exceed 5 feet by 4 feet, and the blooms to be set up in vases.—The Rev. J. H. PEMBERTON was the only competitor, who was awarded 1st prize. His blooms consisted of La France, A. K. Williams, Comtesse de Nadaillac, Caroline Testout, Mrs. J. W. Grant, Ulrich Brunner, and Souvenir d'un Ami.

Thirteen stands were put up in the class for six blooms, distinct, open only to amateurs who have never won a prize at an exhibition of the National Rose Society.—J. CARTER, Esq., Mill House, Halstead, came well to the fore, having very nice Niphetos, Ulrich Brunner, Mrs. J. Laing, and Duke of Edinburgh. G. V. A. SCHOFIELD, Esq., was 2nd; and J. HUNT, Esq., 3rd.

For six blooms not less than four varieties.—J. HENTON, Esq., Batheaston, was well to the front, having good examples of Duke of Wellington, Horace Vernet, Cleopatra, and Kaiserin Augusta Victoria. J. HUNT, Esq., was 2nd, with Margaret Dickson and Madame Bruneau among his best flowers. The 3rd was taken by F. VALENTINE, Esq., Castle Rising, King's Lynn, showing Hon. Edith Gifford, Annie Dickson, Grace Darling, and Viscountess Folkestone.

For six blooms, confined to amateurs who have joined the N.R.S. since the last Crystal Palace Rose Show.—Five stands were put up in this class. G. MOORE, Esq., Lyminster, Arundel, was 1st, showing blooms of Madame Lambard, Hon. Edith Gifford, Captain Hayward, and Magna Charta among his best; 2nd, B. J. MARCH, Claygate, Surrey.

For six blooms, distinct, grown within 8 miles of Charing Cross.—G. W. COOK, Esq., came well to the fore, his blooms being clear, full, and fresh, the best being Caroline Testout, Captain Hayward, Mrs. S. Crawford, Charles Lefebvre, Gustave Piganeau, and Madame Chauvry; 2nd, A. C. GIFFORD, Esq., Tennyson Road, South Norwood, who had a splendid bloom of Mrs. Sharman Crawford, Jeannie Dickson, Captain Christy, Lady A. Hill as his best; J. BATEMAN, Esq., Rose Vale, Archway Road, Holloway, was 3rd. There were six competitors here.

In the class for six blooms of new Roses, distinct, five stands were observed. 1st, CONWAY JONES, Esq., Gloucester, whose blooms were very good, and consisted of Tom Wood, Sylph, Princess de Venosa, Helen Keller, Marjorie, and Mrs. J. Grant. O. G. ORPEN, Esq., Colchester, was 2nd, with good flowers of Enchantress, Francis Debreil, White Maréchal Niel, Mavournen, Mrs. W. J. Grant, and Helen Keller. J. H. PEMBERTON was 3rd, who had good blooms of Souvenir de President Carnot, Merrie England, and Antoine Rivoire as his best.

In the Tea and Noisette sections some very good stands were staged. For eighteen blooms distinct, A. H. GRAY, Esq., Bath, was the winner of 1st prize, beating four other competitors. Here we noticed specially good blooms of Jules Finger, Alba rosea, Maman Cochet, Ernest Metz, Princess Beatrice, Souvenir d'Elise Vardon, Souvenir d'un Ami, Bridesmaid, Comtesse de Puisse, Peter Gifford, Souvenir de S. A. Prince, Medea, Catherine Mermet, Cleopatra, Marie Van Houtte, Comtesse de Nadaillac (very fine, awarded the Silver Medal as the best Tea in the amateur section), The Bride, and Maréchal Niel. CONWAY JONES, Esq., was a close 2nd, who had splendid flowers amongst others of Catherine Mermet, Maréchal Niel, Cleopatra, Madame Cusin, Bridesmaid, Princess of Wales, Innocente Pirola, Madame Hoste, Maman Cochet, and Comtesse de Nadaillac; the 3rd was taken by O. G. ORPEN, Esq., whose blooms, though somewhat smaller, were fresh and clean. Among his most worthy were Anna Olivier, Francisca Kruger, Catherine Mermet, and Jean Ducher.

For twelve distinct Teas and Noisettes open to all amateurs irrespective of the number of plants they grow.—Seven stands were put up: this was a good class, and the stands were very close, the 1st being awarded to A. H. GRAY, Esq., whose blooms of Alba rosea, Catherine Mermet, The Bride, Maman Cochet, Souvenir d'un Ami, and Maréchal Niel, were very prominent. A. TATE Esq., Leatherhead, was a good 2nd, having fine blooms of Maman Cochet, Souvenir de S. A. Prince, Comtesse de Nadaillac, Souvenir d'un Ami, Caroline

Kuster, and Souvenir d'Elise Vardon; the 3rd fell to A. M. BETHUNE, Esq.

For eight distinct Tea and Noisettes, three blooms of each.—A. H. GRAY was again 1st, with very fresh and full blooms of The Bride, Princess of Wales, Madame Hoste, Catherine Mermet, Comtesse de Nadaillac, Maréchal Niel, Ernest Metz, and Souvenir de S. A. Prince; S. P. BUDD, Bath, was 2nd; and Col. J. H. PITT, Maidstone, 3rd; this class was a very attractive one.

For nine blooms of any one variety, Tea and Noisettes.—A. H. GRAY was 1st, with very fine blooms, clean, full, and fresh, of Catherine Mermet; S. P. BUDD, 2nd, with Madame Hoste in splendid condition; E. M. BETHUNE 3rd, with Comtesse de Nadaillac in fine form also.

In the class open only to growers of less than 500 plants of Teas and Noisettes, for twelve blooms distinct.—CONWAY JONES, Esq., was 1st with a good stand, in which were splendid blooms of Souvenir de S. A. Prince, Comtesse de Nadaillac, The Bride, Cleopatra, Madame Cusin, Bridesmaid, and Innocente Pirola; the 2nd was taken by R. F. HOBBS, Worcester, amongst these Roses being wonderfully fine blooms of Maréchal Niel, and good ones of Anna Olivier, Niphetos, and Madame de Watteville; A. EVANS, Esq., Marston, Oxford, was 3rd, with a good stand.

For nine blooms, distinct.—Six stands were put up, the 1st prize going to J. T. STRANGE, Esq., Aldermaston, whose best were Madame Lambard, Marie Van Houtte, The Bride, and Maman Cochet; E. MAWLEY, Esq., Berkhamsted, was 2nd; and Miss PAKER, Reigate, 3rd.

A capital lot entered in the class for nine distinct blooms, open only to growers, of less than 20 plants of Teas and Noisettes.—Here MAMMON WHITE, Esq., Belgrave Avenue, Leicester, was 1st, beating nine other exhibitors; his blooms of Caroline Kuster, Hon. Edith Gifford, and Princess of Wales were especially good. Close up was A. MUNT, Esq., Slough, 2nd, with good flowers of Maman Cochet and Muriel Grahame; the third was taken by W. D. FRESHFIELD, Esq., Reigate, with good forms and very fresh blooms.

For six blooms in the same section.—Six stands were put up, the Rev. G. E. JEANS, Isle of Wight, being 1st; G. E. TRULMAN, Esq., close up, 2nd, with very choice blooms; and R. W. BOWYER, Esq., 3rd.

In the class for four distinct varieties, Teas and Noisettes, three blooms of each, nine stands were shown, and were noticeable all through for freshness; the 1st fell to CONWAY JONES; and 2nd, to R. E. WEST, Esq., Reigate.

For six blooms of any one variety.—CONWAY JONES was awarded 1st with a capital lot of Maréchal Niel; L. PARRY, Esq., 2nd, with Hon. Edith Gifford.

For six distinct varieties, seven trusses of each.—O. G. ORPEN, Esq., came in 1st, with fine blooms of Anna Olivier, Madame Van Houtte, and Souvenir d'un Ami; 2nd, A. EVANS, Esq., Oxford.

For six blooms in not less than three varieties, Teas and Noisettes, open only to amateurs who have never won a prize at an exhibition of the National Rose Society.—Some eight lots were put up, the 1st prize being awarded to J. HINTON, Esq., Bath-easton, who had in fine condition Souvenir d'un Ami, Medea, Souvenir de S. A. Prince, Princess of Wales, Comtesse de Nadaillac, and Catherine Mermet; and J. CARTER, Mill House, Halstead, was 2nd.

In the section for garden or decorative Roses, for twelve distinct varieties, not less than three trusses of each, space occupied not to exceed 5 feet by 3 feet, all hybrid perpetuals, except single-flowered varieties to be excluded, and all Teas and Noisettes and hybrid Teas mentioned in the National Rose Society's Catalogue of Exhibition Roses also excluded; Moss, Provence, and other summer-flowering Roses may be included.—In this class A. TATE, Esq., Downside, Leatherhead, was 1st, showing fine clusters in bottles on a stage covered with black velvet, the bottles so dropped through holes as to be entirely hidden; here were fine clusters of W. A. Richardson, Rosa Mundi, Coupe d'Hébé, Safrano, Perle d'Or, Marquis of Salisbury, Gustave Regis, Red Damask, Bardon Job, and others—a very interesting exhibit. The 2nd prize fell to the Rev. J. H. PEMBERTON, who had a very fine collection, staged in glass vases. Six collections were shown in this class.

For nine distinct varieties, not less than three trusses of each, space occupied not to exceed 1 foot by 3 feet.—Mrs. A. F. PERKINS, Oak Dene, Holmwood, Dorking, was 1st, having good clusters, among which we observed L'Amicus, Madame Plantier, W. A. Richardson, and Paul's Crimson Pillar. Miss DOUGHY A. NESFIELD, Shadwell, Speldhurst, was 2nd, with a very good lot. O. G. ORPEN was 1st for twelve vases of Lord Ponza's Sweet Briars in not fewer than six varieties and not more than seven trusses in a vase, a very interesting display. F. W. CAMPION, Reigate, was 2nd with a nice collection also.

In the Decorative Section open only to Lady Amateurs who are either Subscribers to the National Rose Society, or are members of the family of any Amateur Subscriber, for a vase of cut Roses lightly arranged with any cut foliage, Ferns or grasses, the vase to be an upright ornament, having only one receptacle for flowers.—Miss O. G. ORPEN was 1st with a very beautiful vase of Anna Olivier lightly placed and arranged, with Adiantum cuneatum, and grasses; and Mrs. E. MAWLEY was 2nd.

MISCELLANEOUS EXHIBITS.

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, amongst a collection of hardy bulbous flowers, had many varieties of Lillium Thunbergianum, including the deeply-coloured L. T. Van Houtte, and the distinctly pretty Prince

of Orange; *L. Washingtonianum purpureum*, a spotted variety of this species; the handsome *L. auratum* Wittel; with rich yellow vein through centre of each segment; *L. Browni*, *L. Hansonii*, were noticed. Also *Brodieae*, *Irises* *Calochortus* of the *Venus* strain, and *L. rubellum*.

A grand show of *Cannas* (Indian Shot), in pots, was made by Messrs. H. CANNELL & SONS, Swanley, Kent, in a style of group now becoming familiar at the summer exhibitions. Some of the varieties that showed to greatest advantage were *Madame Crozy*, *Emile Thomas*, *Milne Redhead*, *Souvenir d'Antoine Crozy*, and *Aurore*. Altogether there were some forty varieties.

MESSRS. GEO. JACKMAN & SON, Woking, Surrey, had miscellaneous hardy flowers and cut Roses; some of the latter were of admirable quality, as *Captain Christy*, *Earl of Pembroke*, *Ulrich Brunner*, *Jean Cherpin*, *Duchess de Morny*, and others. The new *Campanula mirabilis* was again shown. Mr. W. SPOONER, Arthur Bridge Nursery, Woking, staged a number of good Rose blooms in boxes.

MESSRS. DOBBIE & CO., Rothesay, N.B., and Orpington, Kent, had a fine display of *Violas* in sprays, and of Sweet Peas in bunches. Some of the best and newest of the Sweet Peas were *Chancellor*, pink; *Colonist*, rose-coloured; *Duchess of Sutherland*, white with slight blush; *Lady Mary Currie*, a very bright flower; and *Lady Nina Balfour*, pale lilac.

MESSRS. LAXTON, nurserymen, Ledford, staged baskets of Strawberries of the varieties *Royal Sovereign*, *Leader*, *Monarch*, and *Mentmore*. The last named is a new one, and deeper coloured than most of the others.

Mr. J. WILLIAMS, Ealing, showed silvered devices, &c., for holding flowers for the decoration of the dinner-table; and Mr. JAS. PINCHES, Crown Street, Camberwell, had a stand exhibiting various useful forms of garden labels.

MESSRS. BARR & SONS, King Street, Covent Garden, had a collection of hardy flowers, the *Peonies* especially being very fine. *Papavers* and *Delphiniums* were also conspicuous.

MESSRS. J. CHEAL & SONS, Lowfield Nurseries, Crawley, had also a collection of hardy flowers.

MESSRS. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., arranged a very pretty group of plants in a corner near to the orchestra. The feature of the group was the double-flowered *Begonias*, which were very fine, and they were tastefully amid fine foliage plants. Messrs. Laing had also a large collection of hardy flowers in bunches, and besides these a table furnished with florists' arrangements.

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nurseries, were represented by a group of *Roses* in pots, backed by large well-flowered plants of *Hydrangea paniculata*.

Mr. FOSTER, Brockhampton Nurseries, had a display of Sweet Peas in bunches of numerous varieties, *Duchess of Edinburgh*, *Sensation*, *Mrs. Eckford*, and *Alice Eckford*, were among the best and the newest of those displayed.

MESSRS. CUTBUSH & SON, Highgate Nurseries, London, N., had a grand lot of *Malmaison* *Carnations*. Also some new perpetual-flowering varieties, *Edith Sydenham*, an excellent white one of good size and non-splitting calyx; and *Noble*, a salmon-pink-coloured variety, is equally good in this respect.

LEE, BLACKBEATH, LEWISHAM, AND WEST KENT HORTICULTURAL.

JULY 6.—The annual exhibition of this long-established society was held in the grounds of The Cedars, Lee, on the above date.

The Lee Society apparently suffers, as many others have done, from the fact that horticultural societies whose chief work is to hold exhibitions have become more and more numerous. Though such a circumstance may be regarded with satisfaction as a sign of horticultural activity, the numerous societies have the effect of weakening each other. The event of Wednesday was a pretty little show, but unequal in extent and quality to many previously held under the same auspices.

Several exhibitors competed for the prizes for a collection of six stove or greenhouse plants, and the 1st prize was won by Mr. C. Birch, gr. to R. Whyte, Esq., Pentland House, Old Road, Lee; Mr. F. Fox, gr. to Mrs. Penn, The Cedars, Lee, being 2nd. Mr. NUNN won for a collection of twelve stove and greenhouse plants. The specimens in this exhibit were of only moderate merit, most interesting being that of *Hoya carnosa*.

The prizes offered by the tradesmen of Blackheath for a collection of six plants in 9-inch pots brought several exhibits, but there was little of interest in them. The best, however, was from Mr. W. Payne, gr. to C. D. Abel, Esq., 11, Eastcombe Villas, Blackheath.

The best collection of six *Cordylines* was from Mr. J. Lambert, gr. to H. W. Segelcke, Esq., Herne Hill. These moderate-sized, well-grown plants were of the following varieties:—*Lord Wolseley*, *Gladstone*, *Goldiana*, *Anerleyensis*, *Madame Bergman*, and *Lindenii*.

Caladiums were shown as capital specimens. The 1st prize for six plants was taken by Mr. C. NUNN, and the 2nd prize by Mr. W. PAYNE.

There were several collections of six exotic Ferns, and the best was one from Mr. C. BIRCH. Mr. J. LAMBERT won for a group of four Ferns.

Of several groups of plants arranged for effect in a space not exceeding 40 superficial feet, Mr. F. Fox had a pretty exhibit, and much the brightest shown. The plants were slightly crowded, however, a common mistake. Several pots of pretty *Schizanthus pinnatus* were in this group.

The best specimen plant in flower was a capital example of *Lilium* from Mr. C. BIRCH, and the Silver Medal for the best

instance of successful cultivation was given as an additional prize. Mr. T. Aley, gr. to R. KERSY, Esq., High Road, Lee, showed good *Coleus*; and also took 1st prize for three table plants, and for a specimen table plant.

Roses.—The class for forty-eight *Roses* distinct (Nurserymen), was won by Messrs. G. & W. H. BURCH, Peterborough, who were also the best exhibitors in the class for twenty-four blooms. The blooms were of very commendable quality, especially in the latter class. Mr. JNO. R. FOX, Croydon, took 2nd prize in each of the classes.

In the Amateur's *Rose* Classes almost all of the 1st prizes were won by Mr. G. W. COOK, the Briars, North Finchley; but for twelve *Teas* or *Noisettes*, the honour went to Mr. J. BROWNING, 9, Belgrave Place, Fools Cray.

Fruit.—Mr. E. Longley, gr. to Mrs. Holt, Waratah, Chislehurst, had good *Pitmaston* *Orange* *Nectarines*, and *Royal George* *Peaches*, and was also 1st for a collection of four dishes of fruit.

The best collection of six dishes of fruit came from Mr. E. Dove, gr. to H. E. Fry, Esq., Bickley Hall, whose *Strawberries* and *Pineapple* were commendable.

Mr. E. Dove won several 1st prizes for collections of vegetables, and Mr. J. Amey, gr. to F. E. Siebreich, Esq., Chislehurst, for salads.

Miscellaneous Exhibits.—Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., staged a large group of cut *Roses*, being the most prominent exhibit in one of the tents, also a few florists' arrangements, and a collection of hardy flowers.

Messrs. B. MALLER & SON, 61, High Street, Lewisham, showed table decorations, hardy flowers, &c. Messrs. G. RAINBIRD & SONS, Manor Lane, and Railway Approach, Burnt Ash Hill, also exhibited. THE HORTICULTURAL AND AGRICULTURAL ASSOCIATION displayed vegetables said to be grown from their seeds, and another stand was devoted to the display of *Ichthemium* guano.

HANLEY HORTICULTURAL FETE.

JULY 6.—This fete, which promises to be one of the best in the kingdom, was held on the above date, when over £1,500 was offered in prizes.

Amongst the exhibitors are some of the best known names, including JAMES CYPHER, of Cheltenham, who took 1st prize of £20, for a group of plants not exceeding 300 square feet (this award also carrying with it a special prize in the form of a handsome Vase, value five guineas); 1st also for six plants in flower and six in foliage, and 1st for *Palms*, as well as 2nd for group of *Orchids* (£10), and eight exotic *Orchids*. Mr. VAUSE, Leamington: three 2nds, one 3rd and 5th.

Mrs. LOVATT, Newport, Salop, principally exhibiting vegetables and fruits, took three 1sts, two 2nds, and six 3rds.

MESSRS. A. DICKSON & SON, Newtownards, co. Down, took 1st for forty-eight, twenty-four, and twelve *Roses*, 2nd for thirty-six.

Mr. J. H. Goodacre, gr. to Earl of HARRINGTON, Elvaston Hall, was awarded 1st for dinner table decoration six dishes of fruit, two bunches black Grapes, and one dish of *Strawberries*; and 2nd for scarlet-fleshed *Melon*; whilst Mr. Read, gr. to Lord CARNARVON, Bretby Park, who sent a large number of exhibits, carried off altogether fourteen prizes in fruits and vegetables, being four 1sts, eight 2nds, and two 3rds.

MESSRS. PERKINS & SONS, Coventry, with three exhibits took three 1sts for a basket of flowers, a grand bouquet, and a ball or bridal bouquet.

THE DUKE OF SUTHERLAND was awarded 1sts for eight *Orchids*, twelve table plants, twelve *Carnations*, six *Nectarines*, dish of cherries, French Beans, and white Turnips, as well as half-a-dozen 2nds and 3rds.

LADY THEODORA GUEST, Sir J. W. PEASE, M.P., Lord BAGOT, J. C. WATERHOUSE (of Preston), D. PRIOR & SONS (Colchester), and TOWNSEND & SONS (Worcester), were also among the more successful exhibitors. Nearly every class filled, and nearly every prize was awarded.

There were some splendid exhibits among those sent in, but not for competition, and the Committee authorised the judges to mark their sense of this by a liberal award of gold and silver medals, the most notable of these being the gold medals to Messrs. CARTER & SONS, for miscellaneous collection of flowers; CHARLESWORTH & CO., Bradford, collection of *Orchids*; Earl HARRINGTON, *Carnations*; ICHTHEM MANURE CO., Ipswich; W. & J. BIRKENHEAD, Sale, for Ferns; SANDER & CO., St. Albans, for a new plant (*Calyphadri* [?]); B. R. DAVIS, Yeovil, *Begonias*; J. H. WHITE, Winchester, cut hardy flowers; M. DICKSON & SON, cut flowers; and Mrs. HODGKIN, West Didsbury, for a very beautiful collection of skeleton leaves. Silver Medals: JOHN PEED & SONS, West Norwood, for *Caladiums*; H. WALTON, Handsworth, collection of *Cacti*; ECKFORD, of Wem, for Sweet Peas, and also merit award for new varieties; W. EDWARDS & SON, Sherwood, for Ferns; B. HARTLAND & SON, Cork, for *Begonias*; W. SYDENHAM, Tamworth, for *Violas*; JENKINSON & SON, Newcastle, for cut flowers; JARMAN & CO., Chard, Somerset, for miscellaneous collection of flowers; WEBB & SONS, Stourbridge, for large-flowering Sweet Peas, including two new ones, "Elsie Evans" and "Annie Evans"; the last-named firm had also a splendid show of *Eclipse* *Gaillardias*, *Hybrid Delphinium*, and *Intermediate Stock* *May Queen*.

At the time of writing, the entrances to the park are thronged, and many thousands have been admitted, and it

is hoped the spirited enterprise of the Corporation of Hanley will be successful.

The judges included Mr. Thomas (Windsor Castle) and Mr. Outram (London), for groups; Barnes (Eaton) and Elphinstone (Shipley Hall), for cut flowers; Cranston (Hereford) and Gilman (Alton Towers), *Roses*; Speed (Penryn) and Edmonds (Bestwood), vegetables; and Goodacre (Elvaston) and Wallis (Keele), fruit.

EALING HORTICULTURAL.

JULY 6.—The leading feature of this Exhibition, which was held in the grounds of Hanger Hill House, the residence of Sir E. MONTAGUE NELSON, was undoubtedly the *Roses*.

Prizes are offered for forty-eight blooms, and not more than two of any variety can be shown. On this occasion four of the leading trade growers competed, Mr. B. R. CANT, Colchester, taking the 1st prize with some glorious blooms, chief among them being *Marie Baumann*, *Mrs. J. Laing*, *Gustave Piganeau*, *La France*, *White Lady*, *Ulrich Brunner*, *Mrs. R. Sharman Crawford*, *Marquise Litta*, *Lady M. Fitzwilliam*, very fine; *Mrs. W. J. Grant*, in remarkably good character; and *Capt. Hayward*, very fine in colour and petal, but lacking fulness. Messrs. G. & W. BURCH, nurserymen, Peterborough, narrowly excelled Mr. C. TURNER, who was 3rd. Mr. TURNER showed a very promising soft pinkish blush-tinted variety named *Edith Turner*, which is very attractive.

A Silver-cup offered to local growers for twenty-four varieties was won by Mr. MAURICE HULBERT, who had some fine varieties. *Noisettes* were small, the season appeared to be too early for them.

Plants filled a large tent, and there were two classes for groups, Mr. J. HARRIS, North Common Road, Ealing, taking the 1st prize with a very pleasing arrangement in the principal class, and Mr. H. PEAL, in the smaller one. Stove and greenhouse plants and Ferns were fairly well represented, and there were some admirably grown *Caladiums*, *Ville de Hambourg*, with a rich colouring and bright rosy red, and *Salvator rosea*, light, being very good.

The character of the plants of *Streptocarpus* proved that their culture is well understood in this locality.

Miscellaneous Exhibits supplied some fine features. From Gunnersbury Park, Mr. GEORGE REYNOLDS, and from Gunnersbury House, Mr. JAMES HUDSON staged large and delightful groups of plants. Both had the new *Acalypha Sanderiana*. Mr. REYNOLDS made use of some fine patches of *Epidendrum vitellinum majus*, and Mr. HUDSON of a rare bit of *Vanda corulea* of a rich deep colour. Messrs. C. LEE & SONS and W. FROMOW & SON supplied very fine groups of plants that were fine features. From the Royal Nursery Slough, Mr. CHARLES TURNER sent twenty very fine specimen *Pelargoniums*, among which *Persimmon*, *Royal Ascot*, and *Prince of Orange* were the more brilliant in colour. Messrs. JAMES VEITCH & SONS sent a very fine collection of cut *Roses*, also bunches of Sweet Peas, and *Heuchera sanguinea grandiflora*. Mr. GEORGE CANON, St. John's Nursery, staged a good group of plants.

Obituary.

WILLIAM HERNE.—This well-known gardener, of Hanbury Hall, near Droghda, died of apoplexy on Sunday morning, June 26, twenty-four hours after the seizure, at the age of 59. He was well known in the Midlands, where he served the late Colonel Ratcliff, Edgbaston; the late James Watson, Esq., M.P., Warley Hall; and Sir Harry Vernon, Bart., of Hanbury Hall. He will be remembered in the neighbourhood of Birmingham as an exhibitor, and maintained a close connection with the Birmingham Chrysanthemum Society since its inception. The latter years of his life were devoted to market-gardening. He was laid to rest in the churchyard of Hanbury, amid expressions of grief and regret. He leaves a widow, four sons, and a daughter.

MR. T. BONSALE.—We regret to have to record the death of a worthy Yorkshire gardener, at the early age of forty-nine years. The deceased had been about ten years head gardener at Elmet Hall, Leeds, the residence of J. H. Kitson, Esq., and he was a capable gardener and respectable man. Elmet is famous for its alpine and herbaceous plants; and has a nice collection of *Orchids*, besides the usual adjuncts of a gentleman's country garden, and these were well managed by the late gardener. A description of Elmet Hall gardens appeared in our issue for May 5, 1894, and a view in the garden a week previously. The post of head gardener is filled, as is stated in another column, by a young gardener from Grimston Park Gardens, who has for five years enjoyed the advantages of having served as foreman under Mr. Clayton, the head gardener at that place.

MARKETS.

COVENT GARDEN, JULY 7.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms	3 0-4 0	Orchids:—	
Carnations, pr. doz.		Cattleya, 12 bms.	6 0-9 0
blooms ...	1 6-3 0	Odontoglossum	
Eucharis, per dozen	3 0-4 0	crispum, 12 bms.	2 0-4 0
Gardenias, per doz.		Pelargoniums, scar-	
blooms ...	1 6-3 0	let, per 12 bun.	4 0-6 0
Gladioli, white, doz.		— per 12 sprays ...	0 4-0 6
sprays ...	0 3-0 9	Roses, Tea, per doz.	0 6-1 0
Lilium Harrisii, per		— yellow (Pearls),	
dozen blooms ...	3 0-4 0	per dozen ...	1 0-2 0
Lily of the Valley,		— pink, per dozen	3 0-6 0
dozen sprays ...	0 6-1 0	— Safrano, p. doz.	1 0-2 0
Maidenhair Fern,		— red, per dozen	2 0-4 0
per 12 bunches ...	4 0-8 0	Stephanotis, doz.	
Mignonette, per 12		sprays ...	1 0-1 6
bunches ...	2 0-4 0	Tuberose, K. blms.	1 0-1 6

ORCHID-BLOOM in variety.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apricots, per box...	0 7-1 6	Grapes, Muscats,	
— baskets ...	3 6 —	per lb. ...	1 6-4 0
Bananas, bunch ...	5 0-10 0	Gooseberries, per	
Cherries, English,		sieve ...	1 6-2 6
May Duke, per		Melons, each ...	1 6-2 0
sieve ...	6 0-8 0	Nectarines, doz. ...	4 0-8 0
— white ...	4 0-6 0	Peaches, per doz.	
— black ...	4 0-6 0	(according to	
— Florence ...	6 0-12 0	size) ...	6 0-10 0
Currents, black,		— Second quality	2 0-4 0
per sieve ...	7 0 —	— foreign, in box	
— red ...	4 0 —	of 12 ...	1 0 —
Figs, per dozen ...	2 0-5 0	Pines, each, from...	1 8-6 0
Grapes, English,		Strawberries, per lb.	0 9-2 0
Hamburg, per		— Southampton,	
lb. ...	1 3-2 0	baskets ...	0 9-1 3
— Belgian, per lb.	0 7-0 9	— Kent, pecks ...	2 6-4 0
— Channel Isles,		— gallons ...	1 6 —
per lb. ...	1 0-1 3	— punnets, dozen	4 0-6 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Onions, Valencia &	
per doz. ...	0 9-2 0	Oporto, cases...	5 6 —
Beans, English		Parsley, per dozen	
(Dwarf), lb. ...	0 6 —	bunches ...	2 6-4 0
— Channel Islands,		Peas, Eng., white,	
per lb. ...	0 6 —	per bushel ...	2 0-2 6
— sieves ...	4 6-5 0	— bags ...	3 6-5 0
— French, flats ...	6 0 —	— Essex white,	
— Broad, bushel...	1 0-1 6	per bag ...	3 0-4 0
Beetroots, per doz.	1 0 —	— Blues, Harri-	
— p. tally of 60 ...	4 0-5 0	son's Glory, per	
Cabbage, open, doz.	0 6 —	bag ...	5 0-6 0
— open, p. tally...	1 0-2 0	Potatoes, Channel	
Cauliflowers, Eng-		Isles, Kidneys,	
lish, per dozen	1 0-2 6	cwt. ...	5 6-6 6
Cress, doz. punnets	1 6 —	— New Bedford...	4 6-6 0
Carrots, New, bun-		— St. Malo, cwt.	5 6-6 0
ches, per dozen	1 6-1 6	— Kent Kidneys,	
Celery, new, per		per bushel ...	5 0 —
bundle ...	1 0-1 8	— Beauties, p.	
Cucumbers, p. doz.	2 0-3 0	bushel ...	4 0 —
Endive, new, p. doz.	1 0-1 6	— Old, the A1	
Garlic, new, per lb.	0 4 —	from Higham	
Horseradish, foreign		district, p. ton	95 0-110 0
per bundle ...	0 9-1 0	Radishes, Round,	
Leeks, new, dozen		breakfast, per	
bunches ...	2 0 —	dozen bunches	
Lettuce, Cabbage,		(home grown) ...	1 3-1 6
home-grown,		Salad, small, pun-	
per doz. ...	0 6-0 8	nets, per dozen	1 8 —
— Cos, per score	0 8-1 0	Shallots, new bun-	
— Paris Cos, home-		ches, per dozen...	2 0 —
grown, per dozen	1 0-1 3	Spinach, Spring,	
Marrows, Vege-		per bushel ...	3 0-4 0
table, per dozen	3 0-4 0	Tomatoes, English,	
Mint, per dozen		per lb. ...	0 4-0 5
bunches ...	2 0-3 0	— Channel Isles,	
Mushrooms, per lb.	0 4-0 6	per lb. ...	0 3½-0 4
Onions, Egyptian,		Turnips, new Eng.	
bags ...	5 0-5 6	per dozen ...	4 0-5 0
— Green, per doz.		Watercress, p. doz.	
bun. ...	1 6-2 6	bunches ...	0 4-0 8

REMARKS.—The Southampton Strawberries may now be said to be done (when this is read). There is not, as far as I have seen, anything you could really describe as a fine sample; the same remark applies to the Kentish Pecks, of which there are thousands coming daily. Of Punnets, the best I have seen were grown in Middlesex. No doubt this week will finish Southamptons, and the bulk of those which come early. Of Peas, the sorts are various, and all in fairly good order. The American Wonder, which I think I know under another name, seems to be a leading article; of dwarf habit, and heavy cropper, the pods are not long, but they contain, when developed, a lot of corn. Gooseberries this week have been down in price—1s. 6d. to 2s. 6d.; few of the last-mentioned price realised. Spinach is now a most erratic vegetable, thus the variation in prices, because one day it's fit, the next it's run. Potatoes are Puritans, Monarch, White Hebrons, and Kidneys.

POTATOS.

Home grown 100s. to 140s.; Jersey and French 95s. to 110s. per ton. John Bath, 32 and 34, Wellington Street, Covent Garden.

TRADE NOTICE.

We are requested to state that Messrs. Brown & Sons, Seedsmen, formerly carrying on business in Baldwin Street, Bristol, have removed to larger and more convenient premises at 31, Bridge Street, close to Bristol Bridge.

NOTICES TO CORRESPONDENTS.

APPLE SHOOTS: *G. K. Gude*. The shoots and leaves are badly infested with mildew. You should remove and burn the worst affected, and dress the foliage with the Bordeaux Mixture, or with flowers-of-sulphur, dissolved first in a small quantity of water as you would prepare mustard for the table, and then incorporate it in soapsuds made with soft-soap at the rate of 3 oz. to the gallon of water. About 2 oz. of sulphur (dry) is an effective dose in a gallon of suds. If the mixture be well made, it can be applied with an ordinary garden-syringe or engine.

CARNATION FLOWERS: *W. R.* The white flower is very pure, and the flaked one most attractive. In either case the calyx is good, and for the border the varieties should be valuable, but they are not necessarily improvements upon varieties already existing.

CHICORY: *J. W. C.* There is the "Red Italian" Chicory in which the red colour is found mostly in the mid-rib, but it extends to the whole leaf faintly. Seeds could be obtained of MM. Vilmorin Andreux & Cie., of Paris, or of MM. Dammann & Cie., Portici, Naples.

CORMS OF THE BRIDE GLADIOLUS: *R. A.* If you could cover the bulbs with hand-lights or frames, and keep the soil dry after the plants die down, there would be no need to lift them, otherwise lifting is necessary. By lifting and resting, and re-planting part of the stock late in September under frames, early bloom may be obtained. The remainder might be kept till March in a dry, cool place, and then planted.

CUCUMBER HOUSES: *A. B. C.* There are various kinds of plants that might be grown in them where the shade is least—say, Maidenhair Fern, Pteris tremula and other varieties, seedling Asparagus officinalis, sown thickly in 60's; Tradescantia zebrina and its varieties; Cyperus, Selaginella Mertensii, S. denticulata, and S. apoda, Oplismenus Burmanni variegatus (Panicum).

CUCUMBERS: *W. T.* A very bad case of Eel-worms at the roots. There is no cure possible. The worms exist on the roots of grasses and other wild plants, and are brought in with the soil. All soil should be at least one year in a stack, which should be kept quite clear of herbage. Clear out, and start anew.

FOSTER'S SEEDLING GRAPE CRACKING: *J. A.* This variety is not liable to this malady, and it is the more unaccountable as Madresfield Court, a variety that is liable to crack under certain conditions, is growing in the same vinery. It may be due to something wrong with the border, and can scarcely be brought about by your management of the vinery; or you may have Oidium Tuckeri in the Vine. Please send some of the berries for inspection.

GRAPES: *J. McClelland*. The bunch sent is badly infested with the fungus that causes the "spot" disease. There is no known cure, and you should cut out every berry that shows the least sign of pitting or spotting, and burn it; and dress the bunches forthwith with sulphide of potassium at the rate of ½-oz. in a gallon of rain-water to ward off future attacks. The bunches should be syringed in a day or two to remove the sulphide. The name of the fungus is Gloeosporium læticolor.

GRAPES: *R. S. Sunderland*. If White Frontignan Grapes are shown in a class for Muscats, the exhibit would be beaten by Muscat of Alexandria or other variety, or it would be disqualified as not being what it was intended should be shown. It is usual to show these small-fruited varieties in a class apart.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*E. J. P.* Tamarix germanica.—*H. W. E.* Buddlea globosa; Nat. Order Scrophulariaceae.—*J. B. R., Plympton*. Dendrobium Pierardi.—*H. K.* Dendrobium moschatum of that variety often called D. calceolus; and

Stanhopea eburnea.—*W. T.* The handsomest form of Oncidium macranthum we have seen. It is recorded in the present issue, p. 22.—*Douglas*. Sibthorpia europæus variegatus (Cornish Moneywort).—*C. D. Knight*. Ophrys apifera, the Bee Orchis; a British species, generally found upon chalk hills.—*John McLogan*. Helichrysum rosmarinifolium.—*Nurseryman*. Pyrus lobata (Mespilus Smithi).—*W. F. G.* 1, Hordeum murinum; 2, Lolium remulentum; 3, Bromus mollis; 4, Phleum pratense; 5, Bromus erectus; 6, Bromus mollis.—*W. H. M.* Viburnum plicatum.—*F. D.* Medicago denticulata.—*Alice Holt*. Euphorbia amygdaloides.—*Dr. B.* Hæmanthus multiflorus.—*Thos. Rogers*. Spiræa canescens (Himalaya).

PROPAGATING-CASE: *Disconsolate*. The so-called propagating-case is not required to strike cuttings of the plants named. Poinsettias and Euphorbias strike well without bottom heat on a shelf in the stove, without bell-glass or any covering whatever, that is if ripe wood be employed as cuttings. They need very little moisture in the soil till roots form. If green shoots are employed, it is best to take a thin heel of last year's wood as well; such cuttings strike in a hotbed frame or under bell-glasses on bottom heat, and they would succeed in a case, but require daily airing for 10 minutes, or damping off will occur. The leaves should be tied to a stick erect, and not allowed to flag. Begonia Gloire de Lorraine strikes from small cuttings coming direct from the roots, and to obtain these the main growth has usually to be cut hard back. They should be put into sandy loam and peat surfaced with sand, one each in a thumb-pot. They need mild bottom heat and not much covering up. None of the plants you name, excepting the first two, are the better for damping overhead; moreover this practice is never advisable in a close case, as it would render damping off a certainty with many species of plants. If you damp cuttings overhead they should as a rule be those that are exposed to the air of the propagating-house. The direction keep "close and moist," does not mean that the cuttings are to be sprinkled, usually it is sufficient to moisten the bed or floor, or plunging materials of the case.

TOMATOS: *H. J. G.* The fruits have the "spot" disease. See answer to "Burns," in our issue for June 25, p. 400. No cure.

TRAVELLING GLASSHOUSES AND ROSES: *A. B. C.* If the pot Roses comprise suitable saleable varieties, and they are planted forthwith without root disturbance, and well done during the current season, the glasshouse might be run over them in late October, resting them cool and dry for a month or two, and then closing the house partially for a time, afterwards raising the internal warmth, and affording water to the soil, so as to get the plant in bloom early in the winter.

TYROLESE PLANTS: *X. Y. Z.* 1, Pack in ventilated boxes in damp moss. The transit through the post takes only two days from Vienna, and perhaps one day out of the Tyrol. 2, Obtain the "Synopsis of European species of Primula," by J. G. Baker, in the Journal of the Royal Horticultural Society, vol. vii., 1886. 3, The Parcel Post obtains between Austria and this country.

COMMUNICATIONS RECEIVED.—*M. D.*—Mons. S.—*A. T.* De la Mare.—*H. B.*—*E. L.* Gembloux.—*R. J. L.*—*J. R.* Altrincham (many thanks).—*H. J. G.*—Young Gardener.—*J. Slater*.—*M. A. Dinter*.—*A. B. S.*—*E. C.*—*J. B.*—*R. McL.*—*W. Herne*.—*R. P. B.*—*F. Pamphilon*.—Attwood & Co.—*T. E. Honwood*.—*W. T. H.*—*C. T. D.*—*J. O'Brien*.—*A. R.*—*E. Chitty*.—*J. G. Bryson*.—Bertram & Jones.—*Thos. Rogers*.—*J. Burnard*.—*D. L.*—*H. B.*—*S. M.*—*W. S. H.*—*D. T. F.*—*J. E.*—*W. Townsend*.—*R. D.*—*W. T. B.*—*R. N. H.*—*J. M. D.*—*C. S. S.*, Boston.—*F. W. B.*—*W. R. W.*—*C. W.* (next week)—*Hortus*.—*C. W.*—*F. F.*

DIED.—On the 1st inst., at Mortlake, Mr. William Stevens, a respected Market Gardener, &c. Aged 67.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For remainder of Markets and Weather, see p. ix.)



THE

Gardeners' Chronicle.

SATURDAY, JULY 16, 1898.

DALKEITH IN JUNE.

LITTLE more than half-a-century has elapsed since a horticultural writer in 1845 declared that Scottish nurserymen catalogued from two to three hundred double-flowered Scots Roses. The intervening interval of time since then has seen their decadence, and all but the extinction of these numerous varieties; and it is doubtful whether any trade firm in Scotland could to-day supply more than a dozen varieties. The facility with which they could be increased by means of seeds, and a sameness in the appearance of many of the varieties, combined with the rapid improvement of H. P.'s and other sections of popular Roses, appear to have been fatal to their existence. At any rate, their reign was a short one. I can find no account of any existing in the last century, and at the beginning of the present. I have discovered one double variety only. Hogg, in the 2nd edition (1822) of his *Treatise on the Carnation, &c.*, names seven varieties, and also remarks, "The Scotch Roses that have been raised from seeds within these few years past are exceedingly fine and delicate, and make a great addition to the flower-garden." About the beginning of the forties, many hybrid varieties were raised by French florists, but these would appear to have been wanting in the characteristics of the true Scots Rose. Stanwell Perpetual, raised at an earlier date, is the sole remaining representative of the hybrids. Its delicate pink buds, its fragrance, and its habit of flowering continuously from May onwards, cause it to be cherished in many gardens.

The connection of these remarks with "Dalkeith in June" will appear when I mention the fact that the grounds and gardens "familiar in the mouth as household words," belonging to the Duke of Buccleuch, and managed in succession during the greater part of the present century by a trio of great gardeners, still contain the remains of a collection of double-flowered Scots Roses, selected by Mr. Macintosh in the end of the forties as the cream of the varieties then in cultivation. The collection originally comprised some 150 varieties, all named, and considered by connoisseurs of the period to be distinct.

The plants form a broad natural hedge, extending to a length of over 100 yards, and their inspection formed the primary object of my visit. They were found as near perfection as Mr. Dunn's judgment had previously concluded they would be. A few of the earliest to flower were going off, and some of the latest were just showing their first opening buds, but the majority were at their best, and it was possible to see every plant more or less in character. Most unfortunately their names were long ago

lost, but they are now all numbered and their characteristics noted, and as Scots Roses may before long assume the position they deserve in gardens, it may yet be not impossible to supply to them their original designations.

As decorative objects their effect is not confined to the flower-garden. The buds are in constant demand for personal decoration, and the long curving shoots, closely studded with buds and expanding blooms, and with neat dark green foliage, are of the utmost value for vase furnishing. Smaller sprays form an admirable setting to blooms of W. A. Richardson or other Roses when laid on the cloth as a table decoration.

The fragrance of the blooms in a mass, as at Dalkeith, is, moreover, very great, and is diffused to a distance. Like the Sweet Briar, the flowers are most fragrant in the evening. The varieties include a few white forms, one of which, very early, is noteworthy on account of the chaste form of its expanded blooms. Another of the prettiest is somewhat late to flower. Of this the expanding buds are barred light purple on dull white, but when fully expanded, the flowers are of various shades of delicate pink and blush, and sometimes white. The petals are large and cupped, and the bloom consequently deep for a Scotch Rose. The above two I thought the best of the collection. Two late varieties, dwarf and distinct in habit, are respectively of a very light and a darker shade of purple. Not a few varieties are mottled, and some of these sport to white, so that on the same stem there may be double mottled, double white, and sometimes single flowers. The shading of some of the flowers it is impossible to describe; one has the merest suspicion of pink flushing on the petals, while yet another is all but red in its markings. Here, again, is one with a dark salmon centre, with a broad, fairly-defined, lighter edging. Another equals it in beauty, the lovely pink of *Rosa alba*, Celestial; and among others are fawny and creamy tints which are most charming.

Growing in close proximity to the Scotch Roses is a shorter hedge of a variety which Mr. Dunn esteems very highly. The flowers are cream-coloured and single, the foliage neat, closely set on long and graceful shoots, and the scent Sweet-briary; it is named *Rosa elegantissima*, but I can find no trace of it in any work or article on Roses. May it not be the old "Yellow Sweet Briar?" I have grown it for a year or two, and like it much for mixing with flowers as a green setting. For this purpose it is largely used in the ducal establishment.

These are, however, not the only old Roses that flourish at Dalkeith, between the tall Holly-hedge which cuts off the orchard from the strip of lawn lying south of the kitchen-garden, a very old Rose-covered trellised walk still exists. The Roses are nearly all very old, some of them, as the double Briar, scarce; others, very ragged looking members of the family, perhaps unique. But among these are many Ayrshire Roses, such as Dundee Rambler; Ruga, and Queen of the Belgians, *Félicité-Perpétue*, *Acidalie*, a climbing single white, &c. The length of walk thus covered extends to over 500 feet. At one end it is terminated by a deeply set-in semi-circular Rose-arbour paved with stones. The corresponding arbour for the other end is set back a few yards at the end of another walk terminating against the Holly-hedge mentioned above, and stands at a right angle to the usual position. The age of this very fine example of

a covered-walk with its terminating arbours is about 140 years. The original oaken posts set into sandstone bases are still intact, but the wooden laths have unfortunately been replaced by iron wires. It was removed hither from its original position in the old gardens, about a mile distant, when the present gardens were made by Macintosh about sixty years ago. Its eastmost end abuts on a sloping lawn studded with flowering and ornamental trees and shrubs, very noteworthy among which is an English *Laburnum* of extraordinarily large and graceful proportions. There are also many interesting specimens of Conifers and broad-leaved trees, including a very large and fine specimen of *Taxus adpressa*, clumps of Japanese Maples, a *Torreya myristica*, a circular bed containing seedling plants of *Sciadopitys verticillata*, with *Saxa Gothæa conspicua*, &c. Here a dividing wall with its border is utilised for the cultivation of the more rare shrubs. Many of these are late introductions which are being tested, both as regards their ornamental qualities and hardiness. For example, *Hedera amurensis* is growing freely on the wall; *Clerodendron trichotomum* is doing fairly well, but as regards Scotland it remains a doubtful subject; *Cercis Siliquastrum*, which fails in the open, succeeds on this wall. At Beil, East Lothian, a splendid specimen of this tree exists, supposed to have been planted by Street, a contemporary of Macintosh. Another shy plant in the open, *Escallonia Philippiana*, grows well on the wall. Here, also, *Viburnum plicatum* was flowering freely, and the species of *Elæagnus*, but all these succeed without protection. *Xanthoceras sorbifolia* is also trained on this wall, but it will also grow fairly well in the open.

In the border a very large collection of ornamental shrubs were mostly all doing well. Such are the newer hybrid Weigelas, the value of which has not as yet been fully determined. *Amygdalus Davidiana* in three varieties, very hardy, free-flowering, and early. Mr. Dunn prunes these as tall standards. Many species and varieties of *Spiræa* were also noted, *S. Thunbergi*, the earliest of all, *S. confusa*, *S. Van Houttei*, and *S. rotundifolia*, a trio with much in common, the last-named perhaps the most worthy of cultivation; *S. ariaefolia* was well budded, and the *S. callosa* section, of which Anthony Waterer is doubtless the best, were showing incipient corymbs on the ends of the shoots. *Spiræas*, it may be noted, prefer a deep holding-soil; otherwise they must be regularly manured and the weaker growths removed. *Choisya ternata*, the "Cherry Pie" of Cornwall, was flowering quite freely, as was also *Olearia macrodonta*, while the smaller, and perhaps prettier, *O. Haastii* was bristling with buds. I was very pleased with *Cytisus pallidus* and *Daphne hybrida*, with flowers not unlike one of its parents, *D. indica*. The aromatic *Caryopteris Mastacanthus* was growing well, and it also flowers profusely at Dalkeith. There is a white variety which, as yet, I have not seen.

Of variegated Dogwoods there is a fairly full collection. *Cornus Spathi* had been nipped by cold, as it not unfrequently is. A very good substitute, however, and equally effective, is found in *Syringa Emodi variegata*; and *S. E. aurea* is one of the best pure yellow-leaved plants, much better than either Weigelas or *Spiræa opulifolia*, with yellow leafage. The Golden Privet, however, is a most desirable plant, and a favourite at Dalkeith. *Parrotia persica* fails to colour here in autumn, and is, therefore of

little value; but *Ampelopsis japonica* does well, and dies off in the most lovely combinations of cream, green, rose, and crimson.

Shepherdia argentea attracted attention by the delightful blending of its yellowish silvery-green foliage. A nice specimen of *Daphniphyllum glaucescens*, the red-foliaged variety, bids fair to become a standard shrub; the foliage, unfortunately, is here much smaller than that produced under the warmer skies of the south of England. Here we had given up *Quercus glabra*, but in a warm corner at Dalkeith it is doing well. *Ptelea trifoliata* var. *aurea*, an old plant, was very fine.

Interesting shrubs with minute foliage are represented by *Buxus myrtifolia*, the plant sixty years of age, and not exceeding 3 feet in height. Equally interesting was *Ilex Fortunei*, and the curious, small-leaved *Philadelphus macrophyllus*, which Lemoine has been utilising in the raising of new hybrids. Very uncommon is a variety of the common Laurel, named *Camelliaefolia*, having convoluted leaves. The hardy "Orange," *Citrus trifoliata*, appeared to be thriving in Scottish air. Hollies are a leading feature, and the collection includes every variety of note, and all the species that will bear the climate.

Of flowering-trees there is quite a large number, such, for instance, as *Buddlea globosa*, *Kolreuteria paniculata*, *Halesia hispida*, and *H. tetraptera*, *Sophora japonica*, *Pavias*, and many more, which it is impossible in a short sketch to mention.

No portion of the extensive gardens at Dalkeith is probably of greater interest to a gardener than the large orchard lying on the broadened slope, terminated by the North Esk River, which flows just outside the boundary. On the opposite side is a haugh, where on the lush-grass, among large trees, full flushed in their summer foliage, a few cows feed. Just beyond is the ancient burgh of Dalkeith, with its tall spires picturesquely crowning the ridge between the North and South Esk Rivers; and further off a delightful stretch of undulating country, field, wood, and hill, meeting the distant horizon. It is a fair prospect. But earlier in the year, when Plum is succeeded by Pear, and Pear by Apple-blossom, the sojourner on the other side the river has then the advantage.

The trees in the orchard, which is closely cropped with vegetables, consist mainly of standards on tall stems. In addition to these, however, there are large numbers of pyramid-trained Apples, Pears, and Plums. Appearances point to a fine average crop of all. In the course of conversation Mr. Dunn incidentally remarked that the Dalkeith collection embraced about 180 sorts of Plums, of which only a few of the best are grown in quantity, Pond's Seedling and Gisborne's being considered the best for standards. Of Apples there are about 700 kinds, which it was agreed might, with advantage to the grower, be reduced to about two dozen varieties. Pears are represented by about 500 sorts, and here again a few popular varieties were esteemed sufficient for working purposes. I took the opportunity to request Mr. Dunn's opinion of the value of Apple-trees grown as pinched dwarfs, and of Pear-trees as free-growing pyramids. The former he considered of value only so long as unremitting attention was accorded, but one year of neglect in details ensured their ruin. Concerning the last-named, Mr. Dunn, while agreeing that large crops were annually secured, yet exhaustion super-

vened sooner or later, and the trees required to be replaced by others.

It is one of the signs of the times that this large orchard is not exempt from the ever increasing crush of flowering plants, which seem to overflow into all departments. A double row of herbaceous *Pæonies* is a very old feature, but *Phloxes* and other flowers for cutting are novel. So also in the kitchen garden, long lines of *Pinks*, *Lychnis*, *Viscaria splendens*, various *Pyrethrums*, and glowing Eastern *Poppies*, as well as Sweet Peas, Carnations, and *Dahlias* yet to bloom were largely in evidence. The main central borders were brilliant with *Violas*, planted diversely in squares, the varieties comprising the whole of those that have received awards at Chiswick. A neat mulching of dry horse-droppings covered the surface of the ground between the plants, and here it may be said that this material is largely used as a mulch both outside and in the fruit-houses. Also in the kitchen garden, filling the west, east, and south borders, in the space between the walks and the dwarf Apple-trees next the cropping quarters, herbaceous flowering and alpine plants are grown. These borders are too narrow to be effective, but they are most interesting, and no doubt valuable adjuncts to the floral department, and as grown at Dalkeith without staking the plants do not consume much time in their culture. It is, I think, not generally known that the greater part of the plants suitable for such borders as those under discussion are best grown without staking at all. Where support is required, a piece of string tied so as to keep the stems from opening outwards is in all but a few cases the whole that is needful.

A rapid walk through the glass department shows that here, as elsewhere in these gardens, while the best of the old is preserved, the novel is also given its place. The newer Cannas, the best *Caladiums*, border Carnations in pots for early summer flowering, and *Streptocarpus* are a few of the latter.

The almost endless stretches of glass structures filled with Grape-vines, Peaches, Melons, Pines, Figs, Guavas, Bananas, and hardy fruits can only be mentioned, and one can only assume that, with a staff not large for the demands upon it, its controller must have all his wits employed to keep Dalkeith, inside and out, in the perfect condition we found it on that June day, when the Scots Roses were so beautiful. B.

CURE FOR THE LILY DISEASE.

IN common with many other amateur horticulturists, I have long been troubled with that widely-prevailing pest, known as the Lily-disease, and the yearly disappointment of seeing my Lilies come up merely to blacken and wither away before they reach the stage of bloom has led me to investigate the matter, with a view to the eradication, or, at least, the mitigation of the evil.

Some few years since I took up the whole of my bulbs of the *Lilium candidum* to the extent of about 2 bushels, for I thought that by a judicious selection of the strongest among them, and by replanting in the most favourable positions, I might be able to improve the then gradually degenerating blossoms. In spite of this, the disease made rapid headway, so that of late I have had but a few poor sickly stems in the whole of my garden. I consulted the County Council lecturers of this district, both of them Fellows of the Royal Horticultural Society, only to receive the discouraging information that this mysterious disease had defied all research and all efforts for its cure; and I have read a recent article in

the *Standard* to the same effect. The several attempts made to procure a healthier stock by the importation of fresh bulbs from Holland have not met with the success they deserved, for the new arrivals have been quickly reduced to the state of the old, apparently worn-out bulbs, by the ravages of the same disease. Hence this strange visitation has practically been stated to be an incurable disease.

I have given the subject some thought for a considerable time past, and from what is exemplified at the present time in my own garden, I believe I may state that I have discovered a cure for this persistent evil, which is remarkable at once for its simplicity with effectiveness. My final experiment dates back to the autumn of 1896, and was confined to three groups of the bulbs; last season they showed a marked improvement in the blossom-heads, which appeared to be entirely free from the disease, though still evidently somewhat weak from its effects in previous years.

This summer I have the pleasure of seeing them perfectly healthy and well grown, with fine green stems and leaves, and the promise of large heads of bloom. Other groups in my garden, which have not been treated, have not a single blossom-stem, and some of them are so far diseased that they have almost disappeared.

Disease and health could not be more exemplified than here, and I shall be pleased for anyone to see and compare them.

And now for the remedy, which anyone may try, I hope with the same pleasing success which has attended my own efforts. In the autumn of 1896 I removed the bulbs from the ground, and after they had dried somewhat I put them into a large brown-paper bag, in which was a supply of flowers-of-sulphur; they were then well shaken up until the sulphur had been worked thoroughly into the crevices. After this, and while still well smothered with the powder, they were planted straightaway, with the results which I have described. I feel disposed to give the credit of my investigations to the Royal Horticultural Society's lecturers of the West Sussex County Council, who first aroused my attention to this subject.

From the nature of the disease I felt sure it must emanate from the bulb, for the bulb-leaves are the first to be attacked; and it then proceeds upward through the stem to the flower, which is the last to be affected.

This season I propose to treat more in the same way, and I shall be pleased to hear that others, whose plants are affected with the disease, have also tried this simple remedy with success. *Horace Byatt, M.A., The Grammar School, Midhurst, Sussex, June, 1898.*

KEW NOTES.

MAGNOLIA PARVIFLORA.—Strictly speaking this is not a new plant, having been described by Siebold and Zuccarini as long ago as 1843, but it has only been introduced during the present decade, and is still practically unknown to cultivation in Britain. Some plants, obtained from Japan, flowered at Kew in 1894, and have done so once or twice since, but the true beauty of the species has not been indicated, nor even suggested, till now. Since the second week in June, a plant growing in the Bamboo garden has been beautifully in flower. It shows the species to be a great acquisition among hardy shrubs, and quite distinct from any *Magnolia* grown in this country, except it be the still little-known and hitherto unsatisfactory *M. Watsoni*.

The flowers of *M. parviflora* are 3 to 4 inches across, cup-shaped, the six petals being very concave, of the substantial texture common to the *Magnolias*, and the largest of them 2 inches long. At their best they are almost snow-white, against which the deep rosy-crimson of the stamens shows in beautiful contrast. These stamens are, indeed, the great feature of the flower, being arranged in four or five superimposed rows on the central column, on which is also borne the cone of yellowish-green carpels; thus they form a flat wheel-like circle 1 inch across. The three sepals are drooping, and of scarcely so pure a white as the petals. When once established this

Magnolia promises to grow freely. It has at any rate made vigorous healthy growths during the last two seasons. The leaves are obovate or oblong, from 3 to 6 inches long, dark green and glabrous above, paler below, and covered with a close pubescence that is more particularly noticeable on the mid-rib, veins, and flower-stalks. All the plants in cultivation have been introduced from Japan, which has generally been regarded as its native country. Prof. Sargent, however, doubtless with good reason, says it is one of the numerous trees and shrubs introduced into Japan from China and Corea.

MAGNOLIA WATSONI.

Owing to its having been mistakenly called *M. parviflora*, this *Magnolia* has become somewhat confused with the true species of that name just dealt with. The two are not, however, difficult to distinguish, although they are more nearly related to each other than to any *Magnolias* in cultivation. *M. Watsoni* is a sturdier plant, and less graceful than *M. parviflora*; its oblong leaves are larger; the flowers, besides

with the graceful habit and distinctness of the plant itself, they entitle the species to a place among choice hardy shrubs. It is remarkable that a shrub so hardy as this has proved to be—both at Kew and in the Arnold Arboretum—should be a native of New Mexico and Arizona, two of the hottest of the S.W. United States. During the last few years a plant has flowered very profusely in June. It is a graceful bush about 4 feet high, with slightly glaucous, smooth, narrow leaves, about $1\frac{1}{2}$ inch long. The flowers are borne on the previous season's growth, and hang gracefully from the lower side of the branches, often in rows 1 foot or more in length. Each flower is solitary on a short, slender stalk, and in shape is not unlike a *Streptocarpus* flower, the lower part of the corolla being tubular, but expanding at the mouth into five slightly reflexed lobes. The entire flower is nearly 1 inch long and over half an inch across, the colour being a singular but pretty shade of green, tinged and lined with purple in the throat. The species, which is the only North American one in cultivation, was discovered by Fremont in 1843.



FIG. 11.—*PHALÆNOPSIS LUDDE-VIOLEACEA*: COLOURS CONSIST OF TWO SHADES OF PURPLE.

RHODODENDRON SMITHI AUREUM.

Considering the rarity of yellow-flowered, ever-green *Rhododendrons*, and the beauty of this particular one, it is strange that it is not more often seen. It is about sixty years ago since it was raised by Mr. Smith, a nurseryman at Norbiton in Surrey, who showed it in flower at the rooms of the Horticultural Society in Regent Street in 1841. Mr. Smith described it as a cross between a seedling *Rhododendron* of his own and "the yellow-flowered *Azalea sinensis*." It was thus the first (and is still not far from being the best) of the hybrids to which the name *Azaleodendron* has been given. It would be interesting to know if any of the readers of the *Gard. Chron.* have large bushes of it, and to what size it grows. I have only seen comparatively small plants, but have been charmed with its free-flowering qualities and its distinct colour. The truss is well formed, and the flowers are each about $2\frac{1}{2}$ inches across; Paxton, however, describes them as "above 3 inches across." The yellow of the corolla is shaded with brown on the upper-side, and numerous spots of a deeper shade also occur on the upper segment. The leaves are not large, and show distinctly the influence of the *Azalea* blood in the wrinkled surface. It is at its best out-of-doors in early June. *W. J. Bean.*

PHALÆNOPSIS LUDDE-VIOLEACEA.

A PLANT in flower of this very pretty garden hybrid, was shown by Messrs. J. Veitch & Son, of Chelsea, on June 22, at the Drill Hall, Westminster, from which our illustration (fig. 11) was prepared.

As seen, the flower, which measured 2 inches in extreme width, possessed petals and sepals of a light-purple colour, and lip of a richer shade of purple. The peculiar bar-like markings of amethyst seen in *P. Luddemanniana* were in the hybrid transformed into rather indistinct spotting, and in form the resemblance to this species was greater than to the other parent. It should be welcomed as another instance of success in crossing the *Phalænopsis*, and an earnest of other fine things in the future.

THE CANNA AS A DECORATIVE PLANT.

THERE is hardly a class of plants cultivated on the Continent which has seen such a marked improvement during the last fifteen years as Cannas, which have risen from mere foliage-plants to a foremost position among summer-flowering plants, as well as become important for winter flowering under glass.

Mr. Crozy, of Lyons, a noted raiser of Cannas, started this improvement by crossing the old *Canna Warscewiczii* with *Canna indica*, and it is to him that we are indebted for a great many fine varieties—the so-called "Crozy Cannas." Since, then, however, the work has been taken up with more or less success by gardeners in other countries, especially Germany; and of late years also in America, England, and Italy. In Germany, Messrs. W. Pfitzer and G. Ernst, Stuttgart, have added many fine varieties to the list; Messrs. Dammann & Co., of Portici, near Naples, have introduced several varieties. I shall, however, refer to these later on. The Americans seem to possess several fine varieties, but as yet these have not been tried in Europe, and for this reason I do not express an opinion upon them. In Stuttgart—in fact, on the Continent generally, Cannas are mostly cultivated as bed-group plants, or as single specimens on lawns, &c., or are planted in company with other foliage plants, as *Ricinus*, *Nicotiana*, *Zea*, *Musa*, &c., in order to impart a tropical aspect to the garden, and with their gorgeous blooms to impart brilliancy to the picture. They are lifted in the autumn, and stored in a frost-proof place until the spring, when they are started, pushed into growth, and planted out when the weather permits—generally in the month of May. They are not grown much for pot culture, although the colours, when grown under glass, are much more delicate than when grown in

RHODODENDRON CINNABARINUM.

Among the Himalayan *Rhododendrons* truly hardy in the London district, none differs so much from the usual garden type as this. There are several plants at Kew varying from 2 to 6 feet high, some of which have this year flowered very well. I have also seen the species finely represented in the gardens about Falmouth; but never a specimen so beautiful or so full of flower as one in Mr. Godman's garden near Horsham a few years ago. The flowers in general outline have been very aptly compared to *Lapagerias*, but they are scarcely so large, and the colour, although it varies greatly, is never the particular red of the *Lapageria*. It is oftenest a rich cinnabar-red, but is frequently shaded with yellow, sometimes with green, thus giving a variety of hues, but always beautiful, and for a *Rhododendron* striking. The small leaves are ovate or lanceolate-oblong, of a glaucous-green when young, and inclined to a rusty-red beneath when old.

LYCIUM PALLIDUM.

Most of the *Lyciums* are not particularly striking in regard to their flowers, being cultivated as a rule for the beauty of their fruits and for their free and graceful growth, especially in maritime localities; *L. pallidum* is, however, an exception. Its flowers are not only beautiful in comparison with those of other species of *Lycium*, but taken in conjunction

being larger (from 5 to 6 inches in diameter), are not of a pure, but of a creamy-white, and they are borne on short peduncles, usually about $\frac{3}{4}$ -inch long. The peduncles of the smaller-flowered *M. parviflora* are more slender and generally $2\frac{1}{2}$ inches long. Unfortunately, *M. Watsoni* is not proving so free a grower as the other; whether this is owing to some constitutional tendency, or to its being grafted on an unsuitable stock, I cannot as yet say. Its branches are apt to die off without any apparent cause. Still, plants are now showing flower at Kew.

the open, and all the dwarf varieties are more or less suitable for pot culture.

It is, however, mainly in the hope of seeing Cannas become more popular in England for bedding purposes, that I write these lines, especially in the south and south-western counties, which are well suited for their cultivation out-of-doors. It must be borne in mind that Cannas require warmth, and we must, of course, choose a warm position in the garden, and one that is especially sheltered from strong winds. There are, however, certain free-flowering and vigorous varieties which will stand a good deal of bad and rainy weather without injury, and by making use of these more especially, we can rely on having a passable show even in not over favourable sites. I believe, however, that by strict selection and crossing these hardier varieties, we may in time possess a strain of Cannas which even in the changeable climate of England will be independent of the vicissitudes of the climate.

It is just in this respect that the Canna Italia and Austria of Messrs. Dammann & Co., large and beautiful as they are, in my opinion, are of little value for planting in cool climates, for apart from the fact that their flowers, even under glass, do not last longer than about half a day, they are so delicate as to suffer injury very easily. Canna Burbank seems to have a similar constitution; but, as I before said, not having had an opportunity of forming an opinion of these American varieties, I cannot say so definitely. If, however, by again crossing, we could impart the durability and length of flowering of the ordinary run of Crozy's Canna to Canna Italia and similar varieties (Messrs. Dammann & Co. announce about twelve or fifteen similar new varieties this spring), the gain would be great indeed. Should this happy stage be reached, the value of Cannas for decorative and cutting purposes will at once be apparent when we consider the large range in fine colours, and the ease with which the plants may be brought to flower in the winter months.

It is somewhat bewildering at first to make a good selection from among the great number of varieties in existence at the present day, and the yearly addition of novelties from all sides; but from personal observation during the last few years of the collections of Mr. Pfitzer and Mr. Ernst in Stuttgart, the following may be recommended as being good varieties:—

Older Varieties, which, owing to their possessing various good points, have retained their position among Cannas, viz., *Indiflora Ehemanni*, the best and most effective green-leaved and Musa-like Canna for planting singly on lawns; *Sénateur Milliand*, the best dark-foliaged variety for the same purpose. *Geoffroy St. Hilaire*, also a fine foliage variety, with a very stately habit, leaves purple-violet. *I. D. Cabos*, a green-leaved variety, with beautiful dark apricot-coloured flowers. *Alphonse Bouvier*, one of the best older varieties for groups, with its rich and effective crimson flowers; it has only one fault, that the trusses of bloom are apt to hang down a little. *Madame Crozy*, also a very good Canna for groups as well as for pot-culture; flowers of a vermilion colour, very delicately bordered with yellow; foliage green; very free-flowering. *Amiral Avellan*, a fine dark foliaged variety, with carmine-orange flowers, and the spikes thrown well above the leaves. *Paolo Radaelli*, foliage green, flowers dark pomegranate-red, bordered yellow. *Ingegnoli Fratelli*, foliage purple-red, with orange-coloured flowers. *Comte de Bouchaud*, with glaucous-green foliage, and extra large canary-yellow flowers, spotted with carmine; one of the best of this class. *Madame Montefiore*, similar to the last, flowers also canary-yellow, spotted brown; it grows tall. *Colibri*, foliage green, with clear yellow-coloured flowers, which have a single carmine spot on the petals. *Amiral Avellan*: this one with green foliage, flowers canary-yellow, and spotted with light red; a pale colour. *Florence C. Vaughan*, similar to *Comte de Bouchaud*, slightly more dwarf in growth, with green foliage, and clear canary-yellow flowers, spotted carmine; very free-flowering. *Charlemagne*, a fine dark-leaved variety, with darker nerves, and flowers of a dark rose; tall. *Doyen F. Liabaud*, a fine extra

large-flowering variety, with green foliage; flowers are citron, spotted brown. *Souvenir du Président Carnot*, has fine, purplish-red foliage, with large flowers of an intense tint of vermilion, and flowers thrown well above the foliage. *P. J. Berckmanns*, foliage bluish-green, and rather tall; flowers of a peculiar shade of violet-rose seldom seen among Cannas. *Souvenir d'Antoine Crozy*, similar to *J. Sallier* file in habit; flowers vermilion, edged with yellow.

Varieties brought out since 1896.—*Czar Alexander III.* is a very fine variety, with bluish-green foliage and large flowers, intense vermilion-red; the plant is very floriferous—it stands rainy weather well. *Hte. Barbercau*, foliage rich green, flowers intense cherry-red, with darker reverse; *Madame H. Rigaud*, foliage green, tinted with brown, and forming fine spikes of dark carmine cherry-red flowers; *Souvenir de Jean Chauré*, a fine variety with intense purple-red flowers of medium size; the foliage is green. *Madame Chabanne* has flowers of a delicate rose, and light green foliage; *Vice-President Luizet*, fine broad green foliage; flowers carmine-crimson-red; *Jean Tissot*, a very effective variety for groups with its dark-green foliage, and its intense carmoisin-red flowers; very free-flowering, and rather extra high in habit; *L. Duport*, also a very floriferous variety, with dark green foliage, and flowers, which are of medium size, of a vermilion-orange colour, lightly edged with yellow; *Aurea*, one of the best yellows, flowers are pure citron yellow, the lower petal slightly dotted.

Mr. Crozy's Novelties for 1897.—The following may be recommended, the others require another year's trial before a definite opinion can be formed of them; *Député Ravarin* with green foliage, and large round flowers of an intense dark grenade purple-red; *Joseph Combet*, a rich velvety carmine, with large flowers and trusses well above the green foliage; *Louis Vorax*, foliage green, and with very large flowers of a pretty light red, tinted orange; *Avant garde*: this is a fine canary yellow, spotted with carmine; the foliage is green—practically, it is an improvement of *Comte de Bouchaud*.

The following were introduced by Mr. W. Pfitzer, Stuttgart, viz., *Kaiser Wilhelm*, a dwarf variety, with scarlet flowers, suitable either for groups or for pot culture, foliage green; this variety has only one defect, in great heat the leaves are apt to roll up, making them unsightly for the time being, unfolding again towards evening, however, without injury; *Germania*, an exceptionally dwarf variety, excellent for pot culture, was much thought of at the Chicago Exhibition; the flowers are of an intense crimson colour, edged and blotched, especially the reverse, with yellow. *Franz Buchner* is, in my opinion, one of the finest Cannas in existence for all purposes, pot culture or the open air, is always good in hot or rainy weather; the foliage is green, and flowers show well above the foliage, they are of a bright orange, tinted lilac, edged slightly with yellow, very free. *Paul Meylan* is somewhat similar in colour, but of taller growth; it is a fine variety. *J. Sallier* file, dark green in foliage, the flowers an intense velvety scarlet, borders blotched with yellow, is an effective variety on account of the great number of its smaller flowers. *Léonard Lille*, leaves bronzy, with darker nerves; flowers of a fine apricot colour, a dwarf variety is very effective. *R. P. Ker*, a tall variety, suitable for the centre of groups, with dark green foliage, edged brown; flowers are large, round, of an intense dark crimson-purple, very effective at a distance; the flower bouquets stand well above the foliage—very free. *Reichskanzler Fürst Hohenlohe*: this is undoubtedly one of the best yellow varieties for groups, standing rainy weather very well; the foliage is green, and flowers are of a very clear citron-yellow, the lower petal only being slightly spotted—a very useful variety. *Captain von Gössel* is a variety useful for pot-culture, on account of its lovely apricot-orange-coloured flowers, slightly tinted gamboge-yellow; the leaves are green.

Pfitzer's New Cannas of 1897-98.—The best of these are *Stadtrath Heidenreich*, fine metallic reddish-brown foliage; flowers of a clear and intense cinnamon-red, are well-formed, and show up snugly in the

bouquets, which stand well above foliage; *J. D. Eisele*, a very good and floriferous variety; foliage dark green; the flowers are nearly round, and are of a clear orange-vermilion—very good for groups; *Hofgärtner Lauche*, very similar in habit to *Germania*, but with flowers of a lighter tint, very floriferous, and capital for pot culture; the flowers are orange-red, spotted and bordered with golden-yellow, and slightly tinted rose; *Mrs. Fr. Eckstein*, a fine dark-leaved variety, with vermilion-orange flowers, standing majestically above the foliage; *Gruss aus Hamburg* this fine Canna has dark green foliage, and clear, salmon-orange-coloured flowers, forming enormous trusses; indeed of such size as at times to droop a little, which is as with *Alphonse Bouvier*, a slight drawback to these otherwise excellent varieties. For groups *Hofgärtner Stiegler*, perhaps one of the best of Pfitzer's 1898 introductions, with dark green foliage, nerved and edged with dark brown; flowers and spikes of bloom are of large size and of a rich carmine-purple, slightly striped, and being also very numerous—this was one of the finest Cannas for groups in the open air last year, notwithstanding the bad weather; it always showed up well; *Hofgärtner-direktor Wendland*, the finest variety of the year: with foliage a rich green, and flowers of an intense velvety dark granite-red, bordered and mottled with canary-yellow; it is very floriferous, and combined with a neat and compact habit, and its intense colouring makes this a great acquisition—seen towards evening in groups, it is not easily forgotten. *Frau Hofgärtnerin Singer* is a fine variety, with medium-sized, pale yellow flowers, almost white, and very free-flowering; foliage dark green, and of compact habit.

The best of Mr. Ernst's introductions consist of *Königin Charlotte*, a fine variety, with green glaucous leaves, and flowers of a rich granite-red, broadly bordered with yellow; a fine variety both for pot-culture and for groups; *Fürst Bismarck*, a fine scarlet flower, of an enormous size; it forms large trusses, and has green foliage bordered with brownish-red. *Gouverneur von Zimmerer*, with shining brown foliage, and large flowers of an intense orange hue, intermixed with dark red; *Goliath*—this Canna is unique, and one of the finest in existence; it should find a place in every collection, especially for pot-culture under glass; the foliage is vigorous and dark green; the large trusses of bloom are very effective, owing to the rich dazzling crimson colour of the flowers; it is a somewhat slow grower, and for this reason is not so suited for the open—the petals are also liable to suffer from great heat. *Princess Pauline*: foliage is dark green, and flowers, which are large and well formed, are of a vigorous cinnamon-scarlet, blotched towards the edge with canary-yellow. The above-enumerated Cannas form a collection difficult to beat anywhere, containing many of the finest varieties in commerce; and I hope that my notes will help to popularise them in England. At the same time I should strongly advise all who come to Germany, especially the middle and south sections, to pay Stuttgart a visit during the summer months, and more especially in August and September. *H. R. IV., Stuttgart.*

HYDRANGEA HORTENSIA FOR MARKET.

Our illustration (fig. 12) represents a group of well-grown plants in pots of the common *Hydrangea Hortensia*, intersected and fringed with a few Ferns for purposes of relief. Messrs. Hill & Co., Wright's Nursery, Lee, Kent, in whose establishment the photograph was taken, are large Fern-cultivators for the trade and for market, besides doing a considerable market trade in such plants as the *Hydrangea*. As most of our readers are probably aware, these *Hydrangeas* are sent to market in 5-inch pots; they are generally about a foot high, and bear a large globular mass of pink flowers, quite out of proportion to size of plant or pot. The cuttings are taken when the plants have flowered, and being grown on coolly during the summer and autumn, make similar plants the following spring. They require a moderately rich, loamy soil.

THE WATER AND BOG-GARDEN.

I SHOULD like to say a few words in praise of this kind of garden, as no other garden is so delightful on a hot summer day as the water-garden. In these gardens we have advantages which some do not possess, that is, a small stream of running water that flows from a spring in the middle of a pond, which keeps the pond always brim-full. At one time the overflow-water was wasted, and ran into the Blackwater. Some few years ago, it occurred to my employer that he would like to make the ditch that carries the overflow look pretty with moisture-loving plants, and this gave me an opportunity that I was

The water in this pond varies in depth from 9 to 20 inches. In the deepest water we planted *Nymphæa chromatella*, *N. odorata gigantea*, *N. o. rosea*, and *Nuphar luteum*, and in the shallower water *Villarsia nymphaeoides*, and have since added *Nymphæa Laydeckeri rosea*, *N. L. lilacea*, *N. L. purpurata*, *N. Marliacea albida*, *N. M. carnea*, *N. pygmæa alba*, *N. odorata sulphurea*, and *N. o. s. grandiflora*. These are all doing well, as the water is shallower and much warmer.

In pond No. 3 the water is still warmer, and the plants in this pond flower remarkably well. The water is much the same depth as in No. 2 pond, but in No. 3 the water is still warmer, from having been

Alisma natans, *Orontium aquaticum*, and *Villarsia reniformis*. *Limncharis* is wintered indoors.

Pond No. 5.—This pond has 1 foot of water and about 18 inches of mud. In this is planted *Richardia æthiopica*, *Butomus umbellatus* (the flowering Rush), *Pontederia cordata*, variegated Rushes, and several sorts of *Sagittarias*, and all these flower well, and seem quite at home. Pond No. 6 has water from 18 to 20 inches deep. In this is planted *Nymphæa Marliacea carnea*, *N. odorata sulphurea grandiflora*, *N. Laydeckeri rosea*, *N. L. lilacea*, *N. L. purpurata*, *N. candida*, *N. odorata rosea*, *N. o. maxima*. On all these we have very fine flowers. The overflow from these ponds is made to form a marshy

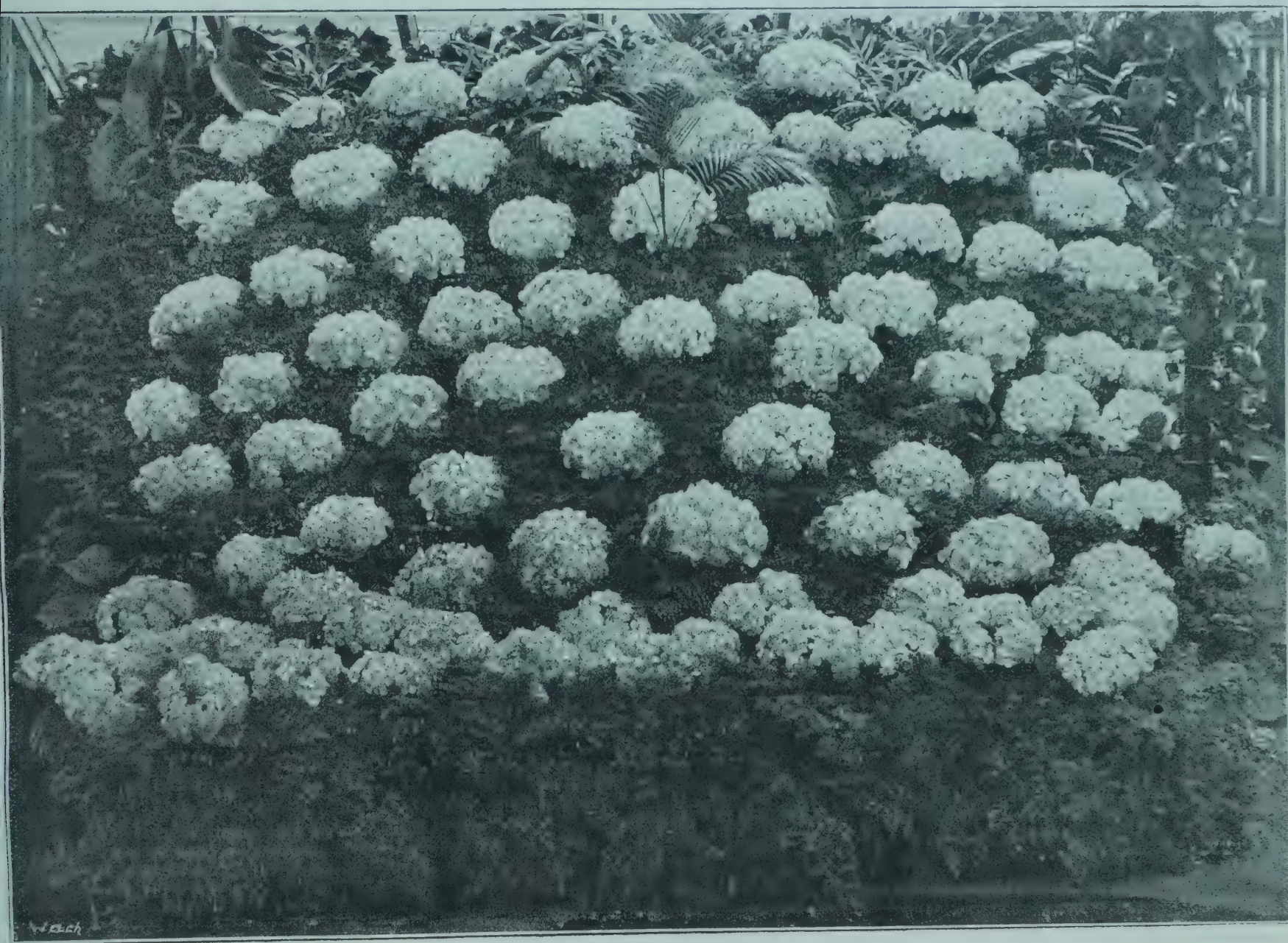


FIG. 12.—HYDRANGÆA HORTENSIA : FROM MESSRS. HILL AND CO., WRIGHT'S NURSERY, LEE, KENT. (SEE P. 44.)

very glad to have. A beginning was first made by planting in the pond where the water rises, the common white *Nymphæa alba*, *Aponogeton distachyon*, *Hottonia palustris*, and in clumps round the edge of the pond, the common yellow *Iris pseudo-acorus*, and herbaceous *Spiræas*. Finding these did remarkably well, we determined to make the ditch into five more small ponds of various depths and shapes, and trying all we could not to make them look in any way formal. In the first pond, where the water rises, which we will call No. 1, we tried *Nymphæa odorata rosea*, and a few others which did not flourish; owing to the water springing there, the sun did not warm it sufficiently for the tenderer sorts, the water is also rather deep, 2 to 3 feet. Pond No. 2 is the first overflow from No. 1 pond.

longer in the sun. In this pond is planted *Nymphæa chromatella*, *N. gigantea*, *N. caroliniana*, *N. Laydeckeri rosea*, *N. L. lilacea*, *N. pygmæa helveola*, *N. odorata rosea*, *N. o. Exquisita*, *N. o. sulphurea*, *N. Marliacea albida*, *N. M. carnea*, and *N. Nuphar Kalmianum*. Round the edge is planted *Caltha palustris* in clumps, and in the water are two clumps of *Pontederia cordata* and different sorts of *Sagittarias*. All the plants in this pond flower remarkably well, and have splendid flowers both in size and colour. Pond No. 4 has shallow water round the outside, but in the centre it is about 20 inches. In the centre is *Nymphæa tuberosa*, *N. tuberosa alba*, *N. alba plenissima*, *N. odorata sulphurea*, *N. Marliacea gigantea*, *N. Laydeckeri rosea*, and a fine white seedling. Round the shallow water is planted *Limncharis Humboldti*,

piece of ground, with pools of shallow water. In this we have planted rougher plants; but, although we call them rough plants, they look very beautiful in their season. These plants consist of Bullrushes, water Flags, water Irises, all sorts of herbaceous *Spiræas*, *Fritillarias*, Snowflakes, *Hemerocallis flava*, *Caltha palustris*, *Butomus umbellatus*, *Lythrums*, variegated Rushes, *Saxifraga peltata*, &c.; and in the pools, common *Nymphæas*, *Menyanthes trifoliata*, *Caltha palustris*, *Hottonia palustris*, and *Aponogeton distachyon*. The overflow from this marsh and bog ground is still further made use of, as it runs away down an open ditch; on the bank of this ditch are planted several sorts of *Spiræas*, several sorts of Lilies, and various sorts of spring-flowering bulbs, and here and there a plant of *Gunnera manicata* to

wave its noble leaves over the running water in the ditch. We hope to get Bamboos to do. The surroundings are also made to harmonise with the ponds, &c., by planting in the grass all sorts of flowering bulbs, and many sorts of flowering shrubs. The whole makes a delightful sort of semi-wild garden, and visitors to these gardens always appreciate a look round this part of the garden more than the more formal or trim part of the garden. I would like to add a word of warning to those who are thinking of taking up this style of gardening with a view of saving labour; if you wish for success, you must be at work, or the coarser-growing plants will soon overgrow the more tender and the prettier plants, and the whole thing will become a mass of weeds and rubbish. *William Townsend, Sandhurst Lodge, Wokingham, Berks.*

BELGIUM.

At the Namur Horticultural Exhibition held on June 26, the visitors much admired the Gloxinias sent by M. Kegeljan, the *doyen* of amateur horticulturists in Belgium. For twenty years M. Kegeljan has been trying with keen interest to improve these plants, and he has well succeeded. The flowers are of unusual size, as much as 5 inches across. They are erect, of various colours, some very uncommon in tint. Those that were exhibited at Ghent in April excited much attention.

Another attraction at the Namur Exhibition were the seedling Roses from MM. Soupert & Notting, of Luxembourg, among which was an excellent variety, *Souvenir de Pierre Notting*. This is a hybrid between *Maréchal Niel* and *Maman Cochet*, with large elongated buds and very fine and full flowers, at first yellow, spotted with rose, and then a fine golden yellow. It is a variety of great promise. *E. L.*

THE USE OF ARTIFICIAL MANURES.

In the issue of the *Gardeners' Chronicle* of May 7, p. 274, Dr. Bonavia refers to the use of artificial manures in conjunction with farmyard or stable-manure, and appears to call in question the advisability of this practice. He further seems to doubt my statement that natural manures could be rendered more useful as plant-food if mixed with suitable artificial manures.

The subject is an important one, and we cannot do better than refer to the world-renowned agricultural experiments of Sir John Lawes at Rothamsted for an answer to the question.

As Potatoes are a garden as well as a farm crop, I will quote some results obtained with this crop first. The following table gives the results yielded by the use of farmyard manure alone, or with other manures in addition, compared with results obtained without manure:—

Table I.—Potatoes grown year after year on the same land at Rothamsted. Manures and Produce of Tubers per acre, six years, 1876–81.

	Total tubers per acre.	
	Tons. cwt.	
Unmanured	2	5½
Farmyard manure	5	4½
Dung and superphosphate	5	11½
Dung, superphosphate, and nitrate of soda	7	2½

It will be seen that the average produce of tubers per acre without manure was about 2½ tons, with an annual application of 14 tons of farmyard manure per acre supplying about 200 lb. of nitrogen, there was an average produce over the six years of nearly 5½ tons, that is a gain of 3 tons of tubers for the use of the dung; the addition of superphosphate raised the produce to about 5 tons 12-cwt., an increase of 7 cwt. per acre over the dung alone. By the further addition of nitrate of soda, supplying 86 lb. of nitrogen per acre per annum in a much more readily available condition than those of that in the dung, the annual produce of Potatoes was raised to 7 tons 2 cwt., an increase over the dung alone of more than 37 cwt. of tubers per acre.

The fact is, that it is only the comparatively small proportion of the nitrogen of farmyard or stable manure which is due to the liquid dejections of the animals that is in a readily and rapidly available condition for plants; whilst that due to more or less digested matter passing in the animal fæces is more slowly available, and that in the litter remains a very long time inactive in the soil. Hence the addition of nitrogen as nitrate of soda to the farmyard manure had a very marked effect in the growth of the Potato crop.

The next table refers to Mangolds, and shows in the same form as previously for the Potatoes, the manures applied each year, and the average produce of roots obtained per acre per annum over eight years, 1876–83.

Table II.—Mangold Wurzel grown year after year on the same land at Rothamsted. Manures and Produce of Roots per acre. Eight years, 1876–83.

	Roots per acre.	
	Tons. Cwt.	
Unmanured	4	9
Farmyard manure	15	10
Dung and superphosphate	15	18
Dung, superphosphate, and nitrate of soda	23	10

The figures show that without manure scarcely 4½ tons of Mangold roots were produced, while farmyard manure alone applied at the rate of 14 tons per acre, yielded 15½ tons of roots, and that the addition of superphosphate increased the produce by 3 cwt. per acre. The addition of nitrate of soda supplying 86 lb. of nitrogen per acre to the dung and superphosphate raised the crop to 23½ tons. Showing clearly that when the nitrogen is applied in addition to the farmyard manure in the very easily and rapidly assimilable form of nitrate of soda, the crop of Mangolds is very greatly increased, and that superphosphate of lime is not without effect.

Similar results could be quoted for Sugar-Beet and Swedish Turnips.

It may be mentioned that notwithstanding the large amount of potash supplied in 14 tons of farmyard dung every year, yet in experiments with Mangolds at Rothamsted during the past two years, 1896–97, it was found that the direct application of potash-salts, in addition to the dung, considerably increased the weight of the crop per acre, and greatly tended to its more successful ripening.

In growing Cucumbers and Tomatos for market, it is the custom to apply large quantities of farmyard or stable-manure in making up the beds of soil, and then, during the period of fruiting, to push forward the produce by means of quickly available artificial manures. The same practice holds good in the growth of early Cabbage, and in the cultivation of Asparagus, besides many other crops which could be mentioned.

In regard to the question of denitrification, it may be stated that denitrification, or loss of nitrogenous plant-food, may take place in water-logged soils, and in badly-drained pot-cultures. Also, that an organic manure, which is very effective for plant-growth when applied to the soil in small quantities, becomes positively wasteful and injurious when applied in excess, on account of the insufficiency of available oxygen; a condition of denitrification is thereby set up, and the nitrates are changed back again into nitrites, and dissipated in the elementary form. *J. J. Willis, Harpenden.*

WATER-LILIES AT GUNNERSBURY HOUSE.

THAT the finely-coloured hybrid *Nymphæas* are destined to make a pleasing and novel effect in garden scenery is apparent in the garden at this suburban residence, where the ornamental sheet of water is now made beautiful by a number of large patches of white and coloured Water-lilies. These were planted some years ago by Mr. J. Hudson, and several of them have been illustrated in the *Gardeners' Chronicle* from specimens supplied by him from this collection. The patches measure several yards across. Some of the more effective varieties at the present time are a *Nymphæa* of a crimson tint, with pink outer petals; *N. Marliacea*, and its

varieties *carnea*, *rosea*, and *roseo-punctata*, varying in shades of rose-colour; *chromatella*, pale-yellow, and *Gloriosa*, red; *N. odorata exquisita*, pink; *N. Laydekeri* and *N. L. rosea*; *N. alba rosea*, and other delicately-tinted forms. Of the whites the fine *N. tuberosa* is very vigorous, and has proportionately large flowers. Growing in a tank, sheltered by some plant-houses, are a number of the bright-blue fragrant *Nymphæa stellata*, none of which has as yet been established in the lake.

The beautiful grounds of Gunnersbury House are in excellent order; the extensive vineries and fruit houses, which are the first consideration; show heavy crops of fruit; and the plant-houses include some excellent Orchids, and a very dark *Vanda cœrulea*. *J. O'B.*

AMERICAN NOTES.

WINTER-FORCING OF ASPARAGUS.

SOME very interesting experimental work in the winter-forcing of Asparagus out of doors has been recently reported by Prof. J. C. Whitten, in a *Bulletin* of the Missouri Experiment Station. The method used was about as follows: trenches were made between the rows of a well-established Asparagus plot. These were made 3 or 4 inches deeper than the crowns of the Asparagus plants, and were covered with boards, soil being filled in on top of the latter. A mulch of 3 to 4 inches of horse-manure was spread over the whole. This left a series of small covered tunnels between the rows. In the end of each tunnel a piece of tile was inserted, through which hot steam was conducted by a steam-hose connected with a boiler. The first steam was used November 14. It required about an hour the first day to bring the temperature up to the desired point, 60 degrees. The distribution of the heat throughout the bed was very uniform and satisfactory. After the first day very little steaming was necessary to keep the temperature up to the mark. The first Asparagus was cut November 24, ten days after steam was first applied. Cuttings of Asparagus were made almost daily for about a month. Prof. Whitten thinks that the method of exhausting steam directly into the tunnels is better than carrying it through a closed circuit and return it to the boiler. I will transcribe here the very interesting conclusions from the *Bulletin*:—

“1. Asparagus may be profitably forced in the open field in midwinter in this climate by running steam into shallow tunnels between the Asparagus rows.

2. The steam, coming in direct contact with the soil, readily penetrates it, heating the whole bed uniformly; whereas if the tunnels are heated by inclosed steam or hot-water pipes, the soil becomes too hot and dry close to the tunnels, while it is too cold midway between them.

3. Forcing the steam into the tunnels keeps the soil moist, and maintains more continuous fermentation of the manure-mulch, thus promoting steady heat.

4. The Asparagus produced in this way was larger, of finer quality, and the bed produced longer, than that forced by any other method tried.

5. The plants thus forced recuperate by being allowed to grow one summer without cutting, while Asparagus plants transplanted for forcing are ruined by the process.

6. The amount of soft coal used to force a plot of Asparagus, 25 by 25 feet, in this way, from December 29 to February 25 (58 days), was 2,308 lbs., costing 182 dols., or an average of 39 lbs. daily.

7. During these 58 days steam was turned into the tunnels a total of 16½ hours, equivalent to 17 minutes daily, or less than 3 minutes daily for each tunnel.

8. The forced Asparagus yielded during the 58 days at the rate of 9,882 bunches, or 4,880 pounds per acre.

9. About 5 minutes at a time is as long as steam can be forced into a tunnel without danger of overheating the Asparagus.”

Of course, a method like this must be tried under various circumstances before its general usefulness

be proved; but the suggestion is certainly a very interesting one, and has the appearance of being practicable under a variety of commercial conditions.

"PLUM POCKETS."

A common and serious disease of Plums in all parts of America is the "plum pockets," or "leaf curl," which deforms young twigs, leaves and fruit. They sometimes destroy practically a whole crop of fruit, and usually spoil a large proportion of the leaves. The curls or pockets are caused by various parasitic fungi of the genus *Exoascus*. Our principal knowledge of the *Exoascæ* parasitic on Plums in the United States comes in Atkinson's* excellent contribution. He has found *Exoascæ* of one species and another on every well-known species of Plum in the United States, and also on the Peach and on several species of Cherries. Prof. Sturgis, who found the disease very abundant on Japanese Plums in Connecticut recommends close pruning, burning of diseased branches, and spraying with Bordeaux Mixture. Dr. Erwin F. Smith of the National Department of Agriculture, a recognised authority in vegetable pathology, says that experiments in spraying Peaches with Bordeaux Mixture has proved efficient against leaf-curl. It would probably do equally well with Plums. *F. A. Waugh.*

PLANT NOTES.

LACHENALIAS.

SEVENTY years ago reliable plant catalogues enumerated as many as twenty reputed species of *Lachenalia*, all classed as greenhouse bulbous plants, and natives of South Africa. *L. orchidioides*, a species which dates back to 1752, is probably amongst the oldest, and the genus was named after W. de la Chenal, who was professor of botany at Basle between 1736 and 1800. The forms cultivated in the present day are probably hybrids from *L. pendula* and *L. tricolor*, or varieties of these. That some are busy at work raising new types is seen from the fact that novelties frequently put in an appearance at the meetings of the Royal Horticultural Society at the proper season. *L. quadricolor* is sometimes named as a species, but it is now regarded simply as a synonym of *tricolor*. *L. lucida*, also known as *pallida*, introduced 100 years ago, may also have contributed to the forms grown in the present day.

As August is the month in which many pot their bulbs, a reference to the process may come as a reasonable reminder. In potting, it is a good plan to sort the bulbs, selecting uniformly-sized ones to be potted together, and so secure uniformity in the head of bloom. Four to six bulbs, according to their size, may be placed in a 5-inch pot, and the compost employed made up of two parts of loam, two parts leaf-mould, and one part each of peat, sand, and well-decayed cow-manure, which can be rubbed to something like mould; the bulbs covered to the depth of half-an-inch or so. Though some recommend giving a good watering to settle the soil about the bulbs, the best plan is to use the compost fairly moist, and not give any water until growth sets in, and then sparingly, but more freely as the foliage develops. They can then be placed in a frame near the glass, protected from the least frost, but giving air on all favourable occasions so as to secure a sturdy growth. Cold draughts should be avoided; if they play directly upon the plants, they are apt to injure the foliage. Cool treatment is decidedly the best, provided they can have adequate protection in winter, and the cooler they can be maintained when taken to the greenhouse to bloom the better.

Lachenalias make charming basket plants, the strongest bulbs should be selected for the purpose, and be pretty thickly planted, to ensure a good display.

Some of the prettiest and most effective are *tricolor*, one of the hardiest, the foliage heavily potted with brown, the flowers yellow, green, and

red. *Lutea*, a variety of this, has flowers altogether yellow, and *luteola* is yellow flushed with green, and is an early-flowering form. *L. lucida*, which is found in catalogues under the name of *pallida*, is regarded as a distinct species, novel in character, the flowers pale, almost white with a tinge of blue, and distinct from the species *pallida*. *L. pendula* is one of the earliest to bloom, and also one of the best from a decorative point of view, ruby-red, tipped with deep purple or black. *L. quadricolor* is a rather distinct form of *tricolor*, the yellow ground tinted with green, and marked with deep purple and red. *L. Nelsoni* is a distinct hybrid, and regarded as an improved form of *L. aurea*, the flowers golden yellow, and borne in long racemes.

When the blooming season is over, the pots are placed in the full sun to thoroughly ripen the bulbs, and on the foliage decaying, the bulbs may be shaken out and stored for repotting at the proper time. *R. D.*

COLONIAL NOTES.

TENDER FRUITS FROM CANADA.

Most people learn by experience, and pay a fair price therefor. The Canadian Agricultural Department last year tried the experiment of sending to the mother country samples of the more tender fruits grown in the Dominion—Peaches, Pears, Grapes, Tomatos. The storing and packing of the first lot were not conducive to success; the second experiment was more successful, as was shown by the condition of the fruit on its receipt here. But then came up the cost of picking, packing, storing, carrying, marketing, &c., and it was found that the venture was not quite the success hoped for—the Department was out of pocket. But the experience gained was of such a nature that no doubt is now actually felt as to the ultimate success of the undertaking—that the exportation of Canada's tender fruits to this country will ultimately, and that soon, pay. We can only wish our Canadian friends success, which they will find in careful selection, and an avoidance of glutting the market, when all difficulties have been overcome.

GRAPES FROM THE CAPE.

It will be remembered that during the late season we had to place on record the arrival by every steamer from the Cape of large consignments of wet and spoilt Grapes, the result of packing in a wet condition, or of bad packing, for the other portions of the cargo arrived in very fine condition. The Agricultural Department at Cape Town state that these damaged consignments were the ventures of private persons, and cannot give particulars; at any rate, the facts may be published in the Department's *Journal* as a warning—that is, if the loss already sustained be not found a sufficient deterrent to wrong-doing.

THE VIRGIN ISLANDS.

Far removed as these are from "the madding crowd," there is still sufficient squabbling in Tortola and the minor islands to necessitate the employment among the 5000 inhabitants of some fifty rural police.

Eurcea cubensis and a *Bromeliad*, locally called "Date," grow in profusion everywhere, and the Commissioner feels sure that a fibre-mill worked economically under the personal supervision of the proprietor would give remunerative results. Taking up the manufacture of lime-juice would in the hands of persons of small capital be nothing short of salvation. The Lime-tree flourishes here wherever grown; there is no blight, no lengthened period of drought, nothing but what is eminently suited for it. The natives appear to take no interest in this industry. Fruit-trees bear exceptionally well in these islands, and were a source of income to the community when the Royal Mail depôt was at St. Thomas; but now the withdrawal of steamers to Barbados, and the importation of American fruit to St. Thomas ousts the native producers, and deprives them of a market, their small gains being further reduced by untrustworthy shipowners, who defraud the producer, and take no trouble to prevent the fruit being spoiled.

A steamer touching at the island would remedy this with cheap freight charges. This would enable fruit-growers to ship to more distant markets, where the fruit, being of exceptionally good quality, would probably find a ready sale.

THE FAN-COOLER IN FRUIT-SHIPS.

ALMOST from the time when it was first proposed to bring home from the Colonies their over-production of meat and fruit, the idea of using the fan in forcing a down-draught of fresh air through the cargo in the hold of a ship has been favourably entertained, principally on the score of economy, the low rate of freight, &c. The idea, however, seems to have hung fire; the risks in a test on a large scale had, perhaps, something to do with delay in making the experiment. Of late days, however, it was determined to try the air-fan on a cargo of fruit from the Antipodes—the venture has been made; but if the results are not quite as the sanguine experimenters anticipated, they are not altogether disheartening, and doubtless will be repeated, and with better chances of success. On the present occasion the fan was driven by electricity, and at a critical period in the voyage the mechanism is stated to have broken down; but all the same, a large portion of the fruit-consignment was unloaded in very good condition. This we have on excellent authority as to the *modus operandi*, that will be easily understood—air is forced through the cargo, cooling to some extent as it goes, but in passing back into the atmosphere carrying off the taint of partial decomposition. We can only wish success to this application of the fan, and to the plucky experimenters. *E. C.*

FLORISTS' FLOWERS.

CARNATIONS AT BIRDSALL HALL, YORK.

SOUVENIR de la Malmaison Carnations are so seldom cultivated to perfection, that I am tempted to write a few lines in praise of a magnificent lot I saw at Birdsall Hall, the seat of Lord Middleton, last week. The house they are grown in many would consider quite unsuitable for the successful growing of these lovely flowers, as it is too lofty, and yet Mr. Bailey Wadds year by year has little or no trouble with them, the high state of perfection to which he has succeeded shows what obstacles can be overcome if there is a will to do so. The house, which is 70 feet long, 15 feet wide, and about 20 feet high, is entirely filled with some 500 to 600 plants all in bloom, fifty of which are two-year-old plants, grown in 12-inch pots, and carrying from twenty to thirty flowers; the plants generally are as full of bloom as it is possible for them to be, and yet Mr. Wadds tells me he is continually cutting some for house decorations. The quantities of the four or five varieties he grows are about equally balanced, but some very fine pots of the red variety make a striking picture upon entering the house. There are also a very fine lot of Tree Carnations cultivated for winter-blooming in most of the leading kinds, which, from their present appearance, should make a fine display when their more favoured rivals, the Malmaison, have finished blooming. *F. C. Edwards.*

VEGETABLES.

CARROT CARTER'S LONG FORCING.

This forcing Carrot is one of the most distinct and valuable that we possess, and when better known it is sure to be extensively grown. It is the quickest variety that I know of, makes but very little top, and the quality is excellent. As a Carrot coming into use early in the year, and for exhibition, it is an acquisition.

NEW PEA THOMAS LAXTON.

I was glad to notice in the report of a meeting at the Royal Horticultural Society's garden, published

* Geo. F. Atkinson, "Contribution to the knowledge of the Parasitic *Exoascæ* of the United States," *Bulletin* 78, Cornell Experiment Station (1894).

in last week's *Gardeners' Chronicle*, that an award was made to this fine early Pea. I have grown the variety for the first time this season alongside of several excellent varieties, and am much pleased with it. It is said to be a cross between Gradus and Earliest-of-All, but it greatly resembles Ne Plus Ultra, excepting that the pods are double the size, and so much quicker. With us it is earlier than Gradus, and only a few days behind Earliest-of-All and other earlies. The flavour is excellent, and moreover it is sure to find a prominent place on the exhibition table. I predict for this Pea a great future. Generally speaking, Peas are late, and fill very slowly this season. *E. Beckett.*

[The pods of the new variety sent for our inspection were of moderate size, closely filled with large, square Marrow Peas, of a good green colour, some of them already getting past their best, proving how early it is in turning-in. Provided Thomas Laxton fulfils the requirements of the private and market-gardener in regard to cropping, it is likely to become a popular Pea. *ED.*]

CARROTS.

At one time I preferred the three varieties, Early Nantes, James' Intermediate, and Altrincham Carrots, and I was never disappointed with the first and last-named, although I often was with the Intermediate. Whether it was a particular strain, or the soil did not suit it, or what it was that was at fault I am unable to say, but it grew very coarse, and split to such an extent that I almost ceased to grow it. The Altrincham variety was always very good in quality, and when cooked it was of a nice red colour. It has another recommendable point in the smallness of the core. Early Nantes never failed me. The handsomest Carrot I have ever grown is Veitch's Matchless, which in quality, colour, and shape, is not to be excelled. For the benefit of those who do not know it, I will say that it is of the "intermediate" type, and is indispensable on the exhibition-table. The land for a Carrot crop should be got into a very deep fine state of tilth, and unless this be done if it be heavy soil, there will be many deformed roots. Another matter that demands attention is the early thinning of the plants, which should be done with great care, and if the soil be dry the row should be copiously watered when the thinning is over, in order to wash the soil into the holes made by the withdrawal of roots, and settle the plants that are left for a crop. *H. Markham.*

CAULIFLOWER, VEITCH'S EXTRA EARLY FORCING.

This variety has this year surpassed itself in size, and, if possible, in quality likewise. From seed sown under glass the first week in February, the plants being put out on a south border as soon as ready, I cut heads in the first week of June, and this without any artificial protection being given, and in a cool climate. This speaks well for the earliness of this variety. The circumference of a head, and that not the largest, was found to be 18 inches, which is rather over the average of former years. For several years past we have been enabled to cut heads of this variety before the late Broccolis were over; the last of the latter was cut on June 9. *J. Easter, Nostell Priory Gardens.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to C. H. BERNERS, Esq., Woolverstone Park, Ipswich.

Stove Plants.—Most inmates of the stove are in full growth, and endeavours should be made to keep them free from insect foes. If Thrips, scale, or mealy-bug are present, and these are not promptly dealt with, the plants will be quickly disfigured, and their vitality lowered. The best remedy is to thoroughly clean with a sponge the infested plants with Richards' XL-alkali liquor, or the ordinary paraffin emulsion. Avoid the use of a hard or a pointed instrument when removing the insects from the foliage, much damage often resulting therefrom, but attach a piece of sponge or soft rag to a small label. It is a good practice to dip such plants as can be easily handled and will bear the process without injury, once a week or fortnightly, in a weak solution of either

the above insecticides, which will usually render further measures unnecessary. Affording water, syringing, shading, ventilating, and damping-down are the principal points of stove-management at the present time, and the progress of the plants will largely depend upon these being properly carried out. Much attention must be given to ventilation, the present season being abnormal in the suddenness and extent of the changes of temperature during the day. Rather let the warmth in the house get above the normal than run risks from admitting cold draughts. Carefully guard against a dry air in the house, damping-down frequently, and maintaining a healthy condition by using the apparatus in dull, cool weather, a stuffy stagnant state of the air being adverse to the welfare of the plants.

Chrysanthemums.—The shoots should be tied securely, these being easily broken off by wind. In showery weather do not be misled by the damp appearance of the soil in the pots, but afford water when it is required. As a general rule to be observed, the pots should be rapped or lifted before water is applied to the soil. Some of the stronger-growing varieties require more water than others; and if possible, it should be the duty of one man to look after these plants, as only one such man can properly understand the needs of special varieties. Aphid is sure to infest the young growths, and must be got rid of by dusting with tobacco-powder, or washing with quassia or tobacco-water. In fine weather, damp the plants overhead morning and evening.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Apples.—It will now be an easy matter to distinguish those fruits which will make the best specimens, or which are best for special purposes on bushes, espaliers, &c., and if the trees are too heavily laden with fruit they should be relieved of a good many, one fruit in a cluster sufficing if they are expected to reach the largest size to which the variety can attain. Good colour usually goes with good flavour, and it is essential in dessert fruits, especially in fruits that are to be exhibited. To enable fruits to colour well, direct sunlight must reach them, and the best positions are the strong branches which project beyond the main portion of the crown. At this date much of the young growths arising in the middle of the crown may be removed; but plenty of branches and shoots covered with full-sized leaves must be left till the development of the fruits. Some care is necessary in dealing with trees that have suffered from mildew or insect-enemies, these not being pruned so closely as others which have escaped injury. It is good practice to apply chemical manure in the case of heavily-cropped Apple-trees, or those from which large fruits are desired; and a good mixture for the purpose consists of nitrate of soda one-sixth, muriate of potash one-sixth, superphosphate of lime four-sixths, to be applied to the soil over the roots at the rate of $\frac{1}{2}$ lb. per square yard, that is, as far as the feeding roots extend, lightly forking it in; and over this should be put a thick mulching of half-decayed light manure—not heavy, wet, over-rich stuff, which keeps the air, and consequently the sun's warmth, out of the soil that it is laid upon. In dry weather, water must be afforded copiously once in ten days, using clear water only the first time after the manure mulch is applied, and afterwards manure-water occasionally alternately with clear river, rain, or pond water. Let the land be stirred periodically with the Dutch-hoe, thus keeping down weeds, and preventing the evaporation of the moisture.

Tomatos.—Those plants only that have set fruits heavily should be assisted with a suitable chemical manure, as nitrate of soda, superphosphate of lime, and potash, if the soil be deficient in these, and an occasional application of water in dry weather. Remove all of the lateral shoots, keeping the plants to one stem, and preserving the principal leaves entire as long as they continue healthy, fastening the stems to their supports as they continue to grow in height. In cool or showery weather do not afford manure, as if this be persisted in, the various fungous diseases the plant is liable to are apt to be engendered.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

Turnips.—The June sowing will now be ready for singling and hoeing, first chipping the line of plants into small clumps with a draw-hoe, and a few days

afterwards singling the plants 7 to 8 inches apart. In showery weather during this month make another sowing for use in October. This should be a large sowing, as should the weather be free from frosts of severity in the late autumn and early winter, the roots will continue in a usable condition till the New Year.

Spinach.—Frequent sowings should be made of the round-seeded, Monstrous de Giroflay, or Long Stander Spinach, during this month, and a piece of ground prepared for winter Spinach. This should be dug over twice, and well pulverised each time, so that the Spinach moth-grub may be exterminated by the birds; and it should not be heavily manured, or the plants will succumb if the frosts are severe. The position of the piece of land should be warm and sheltered from the east and north, and the sowings may be made now and at the end of the present month, affording a space of 2 feet between the drills, drawing these 1 inch deep.

Cabbage.—It is a matter of importance to sow Cabbage seed for the first early summer-crop next year at the proper time. In the south and warmer parts of the country the end of the month or early in August is soon enough, but in the north generally, and in all late districts, the middle of July is a safe and suitable date. The seed-bed should be on a south or west border in late districts, and in the open quarter in the warmer ones; it should be manured with decayed manure, because something readily available is required by the seedlings, and for the same reason this dressing should not be placed deeper than 3 inches. Having dug the ground, proceed to roughly level it with a rake, then trample it firmly and evenly all over, rake it finely, and it is ready for sowing. The seed may be broadcasted or drilled, and if it be new seed, this should be done thinly. The bed or drills may be covered with siftings from the potting-shed, if the staple be clayey or unkindly. Good varieties to sow twice during this month are Ellam's Early, Sutton's Earliest, Wheeler's Imperial, and Enfield Market.

Parsley.—Seed should be sown in a bed by the side of a walk, in a manner that admits of cold frames being placed over a good breadth in the winter.

Eschallots and Garlic.—When the leaves wither, lift, dry, and store like Onions.

General Work.—Attend to directions given last month in regard to weeding, hoeing, affording water to crops, and the earthing-up of such as require it. Continue to plant vacant ground with Savoys, Borecoles, and Sprouting Broccolis, and set out a few more Leeks if this vegetable is much in demand. Put stakes and broad ties to Cardoons, and see that they do not lack water at the root; similar attention being afforded the stems of Asparagus. Continue to plant out Lettuces, Endive, and make weekly sowings of these plants, and of Radishes and Cresses. In view of the many fungus diseases and insect-pests engendered in refuse of all kinds, the Potato tops, vegetable thinnings, weeds, &c., should be removed to the rubbish heap at short intervals of time, and buried under fermenting dung so as to destroy all germs and eggs as rapidly as possible. Potato-tops affected by *Peronospora infestans* should be charred forthwith. The removal of all such rubbish from the vegetable garden not only renders it tidier, but sweeter and more presentable.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of Salisbury, Hatfield House, Herts.

Grape Vines.—Vines from which the bunches have been removed should be afforded plenty of water at the roots whenever a test shows that the soil is dryish, the Vines being syringed twice or thrice a week; and most of the side-shoots may be allowed to grow unchecked till the end of the season, and the vinery kept cool by affording full ventilation. Those vineries in which the fruit is ripe must also be freely afforded air when the weather is dry, the ventilators being closed in rainy and foggy weather, at which times allow a slight degree of warmth in the heating apparatus. Of course the gardener who has ripe Grapes hanging on his Vines must exclude wasps from his vinery, or there will be much loss of fruit. Thin canvas, hexagon netting, scrim, &c., may be used, securely tacking it over all openings, including the doorways. The borders of all the late vineries will, if in good order and efficiently drained, require an occasional thorough application of water. It is a prudent course to examine a Vine-border once a week, water being

afforded to such as are merely moist, and occasional manure-water. The damping of the vineries must be in accord with the prevailing weather, four times being not too often on bright days, and once or twice on sunless days, and scarcely at all in wet weather. When the colouring of the fruit begins, less and less moisture is required in the air, and damping down must cease altogether at the final stage. The stopping of side-shoots must still be followed up, not however doing this by fits and starts, or the cracking of the berries may occur, which is also due to other causes, as for example letting the border get very dry and then affording large quantities of water; keeping the vinery close when colouring begins, is also conducive to this malady. The Madresfield Court Grape is a variety mostly liable to have split berries, and the best means to prevent splitting is to maintain a little more heat in the heating apparatus at the period when the variety is most liable to split, namely, when colour first shows in the fruit. This additional artificial heat should not be afforded at those times when the sun may happen to be shining warmly, but earlier and later in the day. The ventilation should be fairly good, but not excessive, and it should be constant, the upper lights only being closed to keep out the rain. The removal of laterals should cease when this variety begins to put on colour. As a rule of general application, the vinery in which are Grapes beginning to colour should not be closed entirely, but air afforded at the top of the house always, and in warm weather this may be supplemented by a little in the front. Let the thermometer stand at 70° at dusk, and fall to 65° at day-break; on dull days 70° to 75° will be high enough, and 80° to 85° if the sun shines brightly. Afford air in the forenoon at 70°, increasing it in amount at 75°, and again at 80°, and allow the warmth then to rise 5° more. Commence to reduce the amount of air as the warmth declines, and close at 3 P.M.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Cypripedium caudatum and other species.—This most attractive and curious species is but seldom seen in a healthy, vigorous condition. The principal causes of this is a too high temperature, and insufficient ventilation. The best position for the plant is on the north side of the intermediate-house, where it will get plenty of fresh air, and a suitable light. If the plants require additional pot-room this season, the work should be done at once, and if healthy, they will require pots at least two sizes larger than they at present occupy. Fill the pots one-third full of drainage material, and cover this with a thin layer of sphagnum-moss. Peat and moss in equal parts, mixed, and a few broken crocks, form suitable compost, and a few nodules of tufa-stone may be used with the soil. Prick in a few living heads of sphagnum over the surface of the compost. In the case of unhealthy plants, turn them out of the pots, and remove the old soil, then cut off all dead roots, and repot the plants in pots just large enough to hold them, using a little of the same compost as for the stronger specimens. After repotting, keep the soil just moist, and when the plants have commenced to grow freely, frequent waterings will be necessary. *Uropedium Lindenii* is very similar in growth to this *Cypripedium*, and should be treated in the same way. *C. Schlumi*, *C. Dominianum*, *C. albo-purpureum*, *C. Juno*, *C. vexillarium*, *C. Arthurianum*, *C. Statterianum*, *C. Fairieanum*, *C. Mastersianum*, *C. H. Ballantine*, and *C. radiosum*, should all be grown in a shady corner of the same house. They are now growing freely, and require liberal waterings.

Celogyne cristata and its varieties, require plenty of water at the root at this season, but the soil must not be kept in a saturated condition. Several large specimens here are afforded a soaking about once a week, and those in smaller pots more frequently. A slight dewing overhead at closing time will assist the plants to make strong pseudo-bulbs. The pretty and distinct *C. Veitchiana* thrives best when suspended from the roof in small shallow pans, and only a very thin layer of peat and sphagnum-moss. Since the completion of growth, water has been afforded sparingly, but now that the plant is producing its pendulous flower-spikes, more water will be needed.

Milvonia.—Plants of *M. spectabilis*, *M. Moreliana*, *M. Lubbersiana*, and others of that section that are showing their flower-spikes should be given as much light as possible without direct sunlight, and plenty of root moisture is needed until the new growths are completed. *M. Schroderiana* now sending up its

flower-spikes, is a rare and handsome species requiring a moist shady position in the Cattleya or intermediate-house.

Cymbidiums.—Abundance of water should now be afforded to strong well-rooted plants of *C. Lowianum*, *C. eburneum*, *C. Devonianum*, *C. chloranthum*, *C. Tracyanum*, *C. elegans*, *C. Mastersii*, *C. Lowioeburneum*, *C. eburneo-Lowianum*, *C. Hookerianum*, &c., but such plants that have been recently repotted will need care. *Cymbidiums* grow well in a shady part of the intermediate-house, *Odontoglossum*-house, or cool Fernery.

The Cool-house.—Such plants as *Laelia pumila*, *L. præstans*, *L. Dayana*, and *Cattleya marginata*, are just commencing to grow. If a suitable position can be found for them in this house where they can obtain plenty of light, they may remain there until the autumn, but where the *Odontoglossums* are heavily shaded it will be advisable to remove these species to a cool part of the intermediate-house. From the present time *Laelia pumila*, &c., will require to be kept moist at the root until the new growths are made up. The plants may be afforded fresh rooting material as soon as new roots appear at the base of the current season's growth; they are best cultivated in shallow pans that can be suspended close to the roof-glass. Such thin-bulbed species as *Laelia Dormaniana*, *L. harpophylla* and *Cattleya bicolor* should be elevated well up to the light in the Cattleya-house. *Laelia Lindleyana* thrives best when suspended in a light position in an intermediate temperature. *Dendrobium Kingianum*, *D. teretifolium*, and *D. linguiforme* should be suspended in the cool-house where they will get plenty of light. During growth these species require to be kept thoroughly moist, and while at rest moderately dry at the root. Keep the *Lycastes* well shaded from all sunshine, and damp frequently between the pots. Avoid letting water lodge in the centres of the young growths.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord Gerrard, Eastwell Park, Ashford.

Deutzia crenata flore plena.—As a middle or front row plant in the shrubbery, this species of *Deutzia* is a suitable and proper kind of sub-shrub, flowering in summer, and in good soil and sunny situations being literally covered with flowers, which are white, and as its name implies double, which under bright sunlight gradually become at the base of a pinkish hue. It makes a pretty solitary or group plant on the lawn, and it is perfectly hardy. The pruning should be performed as soon as the flush of flowering is passed. In old specimens, if the weak flowerless wood be cut out, and the strongest shoots cut back to half their length or less, or not at all, as fancy may dictate, long graceful shoots are made the same year, which form perfect wreaths of blossoms the next year. Young plants till they are well furnished with shoots, require their best shoots to be cut back rather severely for a few years. It likes a soil well drained, and fairly good; if peat and loam be mixed with the staple, root and top growth are assisted.

Philadelphus coronarius and others.—These are handsome summer-flowering shrubs, of which the common Mock Orange is a type. *P. coronarius* is rather tall in growth, and is a plant that should have plenty of room for full development; whilst the others, like *P. microphyllus*, are smaller, and more compact of habit, making pretty miniature trees if grown or worked on 3 to 4 feet high stems.

Hydrangea paniculata alba.—This is another useful summer-flowering shrub for the front rows of shrubberies, or for planting in large beds. The plant revels in a good soil, and when plenty of manure has been afforded, the flowers come very large. They are borne in panicles at the ends of the shoots. It is very effective when used as a dot-plant, or for the centres of large beds, or when intermingled with scarlet zonal Pelargoniums. Some other useful varieties are *Thomas Hogg*, and *H. grandiflora*, *H. japonica stellata*, and *H. japonica Mariessii*.

Hypericum.—For the covering of banks, and planting in dry places under the shade of trees, for forming ornamental coverts, and the front rows of clumps and shrubberies, *H. calycinum*, or *St. John's Wort*, is probably one of the best summer-flowering subjects. The colour of the flower is yellow, as it is in all the species, of which there are many. Some are of a small, and others of a large growth, and some attain a height of 4 feet. They mostly flower throughout the summer. A minia-

ture variety of recent introduction, whose height is about 6 inches, which I saw in the Coombe Wood Nursery of Messrs. J. Veitch & Sons recently, should be useful as a permanent edging plant.

Rose York and Lancaster.—For a continuity of bloom and varied tint, this is a very effective, single-flowered Rose. The plants do best when pruned somewhat hard, and generally it is of easy culture, and quite indifferent as to soil, although naturally thriving best in good loam.

THE APIARY.

By EXPERT.

How to commence Bee-keeping.—There are many things in bee-keeping which may be considered of importance; the beginner should understand all of these if he or she would be successful, hence no one should enter the ranks of bee-keepers without first reading some of the many good works on bee-keeping. There are more good books on this subject than can be named here. Having procured one of these books, carefully read it two or three times, till the whole is familiar to you from beginning to end, when you will be ready to subscribe for and read intelligently one or more of the several good bee-keeper's journals there are published here and in the United States. Having got so far, I will tell you one of the many other things you will need to know, for on this hangs very much of that which will bring prosperity. In nearly all localities where bees can be kept, there are certain plants and trees which give a yield of surplus honey at a certain time of year, while, aside from this, there is little more honey obtained by the bees than is needed to supply their daily wants. Some localities give a surplus at three stated periods, others at two, while the majority give only one such yield. Hence, it must be apparent to all, that if such a honey-yield (or yields) passes by without any surplus, none can be obtained during the season. From this it will be seen that in order to be a successful apiarist, a person must have a knowledge of his locality, and also know how to secure the labourers (bees) at the right time, so they can be on hand when the honey-harvest is at its best. Failing to do this, there is little or no profit in apiculture, and my main reason for writing on this subject is that those who read may obtain the best results from their bees. Practically first, then, we have the location. In Central New York, says an American writer, the honey-crop comes mainly from Linden or Basswood, which blooms from July 2 to 15, and lasts from ten days to three weeks, according to the weather. In other localities in this State, White Clover is the main crop, coming in bloom from June 10 to 16, and again, in others, Buckwheat, yielding honey in August; but as the larger part of those living in the Northern States have a yield of honey from Basswood, I will speak of that as the harvest in illustrating what I wish to. Bear in mind, however, that it devolves on the reader of this to ascertain by careful watching just when and what is the source of his surplus honey, so as to work accordingly. After having determined when we may expect our harvest of honey, the next step is to secure the bees in just the right time for that harvest. If you have a field of grain to cut, you hire the labourers when the grain is ripe—not before or afterward; yet in keeping bees, hundreds pay no attention to the matter of securing labourers, so that as a rule they are generally produced so as to become consumers rather than producers, and for this reason we often hear persons exclaiming that bee-keeping does not pay. The queen is the mother of all the bees in a colony, she laying all the eggs producing them. Under the greatest stimulation she is capable of laying from 3000 to 4000 eggs a day, yet often she is laying only from 500 to 1000 eggs daily at the time she should be doing her best. After the egg is laid, it takes three days for it to hatch into a little larva. This larva is fed six days, during which time it has grown so as to fill the cell, when it is capped over, and remains hid from view for twelve more days, when it emerges a perfect bee. This bee now works inside of the hive for sixteen days more, when the colony is in a normal condition, doing such work as feeding the larvae, building comb, evaporating nectar, &c., when it is ready to go outside as a field-labourer, and at forty-five days, during the working season, from the time of hatching, it dies of old age, and another generation takes its place. From the above, it will be seen that the egg must be laid at least thirty-seven days before the honey-harvest, in order that our bees have the opportunity of labouring in that harvest to the best advantage.

(To be continued.)

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 16	New Brighton Rose and Horticultural Show.
WEDNESDAY, JULY 20	Cardiff and County Horticultural Society's Show (8 days).
THURSDAY, JULY 21	Sidcup Rose Show.
SATURDAY, JULY 22	Royal Botanic Society, General Meeting.

SALES.

WEDNESDAY, JULY 20	Clearance Sale of 40 Greenhouses, Piping, and the whole of the Plants, at the Nurseries, High Road, Tottenham, by order of the Executors of Mr. George Beckwith, by Protheroe & Morris.
FRIDAY, JULY 22	Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—63° 4'.

ACTUAL TEMPERATURES:—

LONDON.—July 18 (8 P.M.): Max., 68°; Min., 54°.
 PROVINCES.—July 18 (6 P.M.): Max., 70°; South-west Counties; Min., 50°; Sumburgh Head.
 Fine, warm.

Cyanide of Potassium as an Insecticide. Experiments of an extensive and exhaustive nature have been carried on in recent years under Government direction in the United States of America, with the view of discovering a cheap and effective insecticide, which ordinary people might use with ease and certainty for the destruction of noxious insects in greenhouses and similar glass structures in which plants are cultivated. Among numerous other ingredients fatal to insect-life which have been experimented with on a large scale, and carefully tested on all kinds of plants grown in glass structures, the cyanide of potassium has been found to approach nearest to the standard aimed at—cheapness and efficiency, facility of application, and certainty in its results—when used in accordance with a few simple conditions. The fumes of cyanide of potassium in a diluted state, are well known to be one of the most effective agents that can be employed for the destruction of the common wasp, *Vespa vulgaris*. A few drops of the diluted solution on a small bit of soft woollen rag, or a little cotton-wool, or wadding, carefully inserted in the mouth of a wasp's nest, leaving room for the wasps to pass out and in over it, is fatal to all the wasps that come within the influence of the deadly fumes of the potassium. Most gardeners and fruit-growers are aware of this valuable property of the cyanide of potassium, and although it is a deadly poison and must always be handled with the greatest caution, they have learned to use it with freedom and safety in the open air for the destruction of that great enemy to the British fruit-grower, the common wasp. Its use as a general insecticide inside of glass structures has not hitherto been in vogue in this country, but the success which has attended its use in the United States fully warrants an exhaustive trial of its merits in our plant-stoves and greenhouses.

The following particulars about the insecticide and the method of using it are by a skilful gardener in charge of an extensive garden and ranges of glasshouses in the valley of the Hudson, in the State of New York, who vouches for its success and economy, after using it solely for clearing his houses of insect-pests for the past eighteen months:—

"Having in readiness a quantity of cyanide of potassium and sulphuric acid, sufficient of each for the operations in hand, a number of stone-ware jars, and a kettle of hot-water, the work is carried on as follows: Pour first about a pint of boiling hot-water into a jar, and then add 1½ pint of sulphuric acid, and let the mixture stand till it begins to boil rapidly, which it will

do in a minute or so. The cyanide of potassium is then added, in the proportion of one and eight-tenths of a grain to every cubic foot of free-space contained in the house to be operated upon. In calculating the free-space in the house (or the cubic feet of air contained in it), allowance must be made for all staging, heating-apparatus, pots, soil, and bulky plants, &c., so as to get at the exact number of cubic feet of air, or free-space, which the fumes have to fill. The proper quantity of the cyanide to fill this space should be placed in a thin but strong paper-bag, or bags, if the house is large; and the bag, or bags, should be no larger than is necessary, although for safety a second paper-bag may be used over the first one. A few eyelets or hooks should be inserted in the woodwork of the roof to carry a string from the door to immediately over the jar in which the mixture of water and sulphuric acid is boiling, and one of the small bags of cyanide is fastened to the end of the string and suspended a few inches above the boiling liquid in the jar, the other end of the string being securely tied outside the door. The house now must be closely shut up, and every person being outside of it, the operator unties the string, and allows the bag of cyanide to drop into the jar of boiling liquid, which quickly destroys the paper-bag and disperses the cyanide in fumes to every corner and cranny of the house. The operator, after releasing the string and dropping the bag into the jar, should, for safety from any fumes which may escape through a hole or crevice in the house or door, stand back a few paces until the cyanide has performed its deadly work. In exactly twenty-five minutes from the time the bag was dropped, by which time the fumes will have found their way into every hole and corner where an insect may be hiding, and killed it, the doors and ventilators, and all sliding sashes, should be thrown wide open, so as to allow the foul air to escape as quickly as possible, the operator being very careful not to breathe it, else consequences may be serious. In about twenty minutes, or at most half-an-hour, according to the amount of ventilation that is given, the house will be safe to enter; but it is obvious that in dealing with such a poisonous gas one cannot be too careful in running any risk that can be avoided. No person should venture into the house while there are any of the fumes in it, as they will kill almost any animal in a few seconds, and man is as easily affected by them as any of the lower animals. In fact, they will kill every living thing that breathes, and hence their value in exterminating insects, of which none will be found alive after the house has been fumigated in the manner described with the cyanide of potassium.

All damp must be driven out of the house, and the plants should be quite dry in their foliage before commencing to fumigate them with the cyanide, because if there is any moisture on the leaves and young growths, they are liable to get scorched. All being dry and in good order, the process may be carried out with perfect safety to the plants; and houses full of Palms, Ferns, Roses, Violets, Carnations, and other tender plants and flowers, have been treated as described during the past winter and spring with the most successful results, the insects being completely destroyed and neither a flower nor a leaf hurt in the least.

The cyanide should be as pure as possible, and of course handled with the greatest care to prevent any accident; in short, it should be treated exactly the same as all poisons must be

treated according to law, and there is then no danger in using such a valuable insecticide. The amount of water and sulphuric acid to be put into a jar varies with the size of the house, which regulates the amount of cyanide to be used. The water must always be first placed in the bottom of the jar, and the proportion of water to sulphuric acid is always the same—two parts of water to three parts of acid—and the quantity of that mixture in the jar should be just sufficient to completely submerge the bag of cyanide when dropped into it. The operator must also be sure the liquid is boiling before the bag is dropped. If it is not boiling rapidly, pour in a little more sulphuric acid, but be careful not to overdo it, which would waste the materials and do more harm than good. Should large or long houses require to be fumigated, the number of jars can be increased to the needful extent, distributing them evenly throughout the house, and taking the strings out through the ventilators, or a small hole bored in the woodwork for the purpose. In fact, there is no structure for growing plants in which this insecticide cannot be applied; but while that is the case, it should never be used in conservatories or plant-houses attached to a mansion, or dwelling-house, where there is a possibility of the noxious gas finding its way into the rooms. With due caution, and careful manipulation, the cyanide of potassium may prove a great boon to the horticulturist."

THE PLEASURE-GROUND AT EAST BURNHAM BEECHES.—Our illustration (fig. 13, p. 51), shows a view in the gardens at Mr. H. J. VEITCH'S residence, East Burnham. That the owner should, after his long and varied experience in horticulture, leave the beaten track in the laying-out of his own garden, and show his sympathy with the natural method in preference to the formal and symmetrical, is perhaps no more than we should expect. This style appeals to most of us, and especially to those who have looked for a long course of years on what is, after all, the architect's garden, the garden in which the plumet, the theodolite, and measuring-rod dominate every feature to the exclusion of the natural, excepting when in leading strings. The trees seen in the picture were, of course, existing there when Mr. VEITCH bought the place, and in this part he has been satisfied to merely supply the embroidery to the clumps and belts of them, and furnish a pool of irregular outline in the dark nook for the sake of affording variety and as a home for a few aquatics, including *Marliac's Water-Lilies*. It would appear that a ditch bisects the turf, as is suggested by the clumps of rushes, the giant *Heracleum*, the *Epimedium*, *Spiræas*, and other moisture-loving plants bordering the sides. Doubtless the lovely Japan *Iris* find a suitable home hereabouts. The white-flowered mats seen at the angle of the clump on the right-hand consists of *Crambe cordifolia*, a hardy herbaceous perennial from the northern Caucasus mountains, and growing to a height of six feet. Those who know their hardy herbaceous perennial plants well will have no difficulty in suggesting a number of them suitable for adding the charms of habit, leaf, and flower to the scene depicted.

BOTANICAL MAGAZINE.—The July number contains coloured figures and descriptions of the following plants:—

Cologyne Swainiana, Rolfe.—A native of the Philippine Islands, closely related to *C. Dayana*, but the present plant is smaller, the sepals and petals are not reflexed at the margins; t. 7602.

Callicanthemum rutæfolium var. *anemonoides*.—An herbaceous plant, with tufts of palmately divided foliage, long peduncles bearing single flowers at their extremity, each about 1½ inch broad. The construction of the flower is similar to that of an *Hepatica*; t. 7603.

Iris Grant-Duffi.—A yellow-flowered, rhizomatous species, whose falls are pencilled with purple streaks, and whose disc is marked with an orange-coloured central blotch. Native of Palestine; t. 7604.

Eria latibracteata.—The plant forms a chain of rounded pseudo-bulbs, from the sides of which emerge the flower-spikes, with numerous yellowish flowers. Native of Borneo; t. 7605.

Calochortus clavatus.—One of the handsomest garden forms, having large deep yellow flowers. It was introduced by Mr. CARL PURDY, and flowered in the open border at Kew in June; t. 7606.

PUBLIC GARDENS AND THE STUDY OF BOTANY.
A letter was received by the London School

THE BOARD OF AGRICULTURE has issued a series of leaflets relating to insects injurious to plants, such as the fruit-tree beetle, *Scolytus rugulosus*; the eel-worm, *Tylenchus devastatrix*; the red-spider, *Tetranychus telarius*; the Asparagus-beetle, *Oriocera asparagi*; the Pea-thrips, *Thrips pisivora*. Copies of these leaflets may be had free of charge, and post-free on application to the Secretary, Board of Agriculture, 4, Whitehall Place, S.W. Applications need not be stamped.

"BIBLIOTHEQUE D'HORTICULTURE ET DE JARDINAGE."—Three volumes of this series (Paris: OCTAVE DOIN, et Librairie Agricole) are now before us, and may be spoken of together. All are useful

CHRYSANTHEMUMS.—We have received a copy of the memoirs read at the Chrysanthemum Congress at Lyon, including one on the "Diseases and Parasites of the Chrysanthemum," by M. CHIFFLOT; on the "Fertilisation of the Chrysanthemum," by M. GERARD; and on the "Best Manures and Composts," by M. FATGER. These papers are in the French language, and may be had of M. OCTAVE DOIN, 8, Place de l'Odéon, Paris.

AMERICAN AGRICULTURE.—M. P. DE VUYST has published *A Comprehensive Review of the State of Agriculture in the United States*. It may be had from OCTAVE DOIN, Place de l'Odéon, Paris.



FIG. 13.—VIEW IN THE GARDENS, EAST BURNHAM PARK, SLOUGH. (SEE P. 50.)

Board from the London County Council, stating that the Parks and Open Spaces Committee had considered the Board's letter of May 24 last, which enclosed an extract from a report from the British Embassy at Berlin, as to the arrangements in force in that city for facilitating the study of botany, and which asked the Council whether a somewhat similar arrangement could not be made in London. The County Council informed the Board that they were taking steps in this direction by forming a series of beds in Battersea, Ravenscourt, and Victoria Parks, with specimens of plants in their natural orders, and added that the Parks Committee thought that it would be desirable to see the result of this experiment before proceeding any further for the present. We commend to the Boards concerned the perusal of the article on town botanic gardens in our last issue.

handbooks, illustrated and well arranged. M. JULES RUDOLPH is the author of the treatise devoted to *Caladium, Anthurium, Alocasia, et autres Aroidées de Serre*; MM. G. BOUCHER and S. MOTIET write on *Les Clématites, Chèvrefeuilles (Honeysuckles), Bignonées, Glycines, Aristoloches, and Passiflores*; and M. ALB. LARBATÉRIER publishes his *Essais Pratiques de Chimie Horticole*.

THE FLORIDA VELVET BEAN.—We had occasion to refer to this in a preceding number. We now have to make mention of an article with an illustration in the *Queensland Agricultural Journal* for May last. The plant is named as *Mucuna pruriens* var. *utilis*, and it is thought it may prove a valuable fodder plant in warm climates, and useful for green manuring.

BOTANICAL NOMENCLATURE.—Our botanical works are praying for some new ADAM to arrive who will give names to flowers that everyone will recognise. In regard to the scientific names, they thought they had it "down fine" when, in the time of LINNÆUS, they established a set of canons which every orthodox botanist, it was supposed, would obey. After a century of trial, it was found the laws agreed upon had not been observed. There has become a revolt, and a sort of go-as-you-please practice is prevailing. One author issues a book with one set of names, another a book with a different set of names for the same plants. One man's herbarium is arranged under the names adopted by one shining light; when the other starts to examine his friend's collection, he finds it "all Greek" to him. In a spirit of desperation some of the leading botanical publications are giving

prominence to what they term common names; but before the text has been hardly published, the common name is found to be uncommonly uncommon. Few know what the others are talking about. Babel rules, and a second ADAM is prayed for. *New York Independent*, June 25.

FLOWER AND FRUIT-FARMING IN ENGLAND.

—Mr. W. E. BEAR contributes to the *Journal of the Royal Agricultural Society of England* an elaborate article on the culture of flowers for market, giving special prominence to the Narcissus culture in the Scilly Islands. A great deal of similar information to that here given has been published at intervals in our columns, but those interested will be thankful to have the information in a separate form. Here is an extract which should be noted by our statesmen:—"The freight per cwt. from St. Mary's to London, 350 miles, is 8s., while 6s. to 7s. is charged for conveyance of similar goods from the South of France, 700 to 800 miles. From the Channel Isles the charge is 4s. per cwt.

CYCLAMEN LATIFOLIUM IN NORTH AFRICA.

—Professor WRIGHT, in the last number of the *Notes from the Botanical School of Trinity College, Dublin*, mentions the discovery, in 1895, on a hill called Djebel Bon Kournein, of *C. latifolium*, Sibthorp. It appears that *C. punicum* of Poir. is a synonym referred to the same species. Messrs. BONNET and BARRATTE, in their *Catalogue Raisonné des Plantes Vasculaires de la Tunisie* (1896), allude to the presence of the plant in other localities near Tunis. Professor WRIGHT adopts the generic spelling *Cyclaminus*, and the specific name *Persica*. The *Kew Index* has *Cyclamen latifolium*, and this is the name that is most convenient for gardeners to follow.

PROFESSOR FOSTER.—An excellent portrait of this eminent gardener and distinguished man of science is given in the *Garden* for July 2.

WHEAT PROSPECTS IN THE UNITED STATES.

—It will be interesting at this period to note that, according to latest reports, the average condition of spring Wheat is the almost, if not entirely unprecedented one of 100·9, as compared with 89·6 on June 1, 1897, and a June average of 92·5 for the past ten years of the twenty-four States reporting on the condition of spring Wheat. Six report a full normal crop, and eleven a condition indicating from one to fourteen per cent. above the normal. As to winter Wheat the average condition is 90·8, as compared with 78·5 at the corresponding date last year, and 81·6—the average for the last ten years.

A NEW CARNATION.—The excellent white-flowering Carnation mentioned by our correspondent on p. 36 of our last issue, in his report of the meeting of the Scottish Horticultural Association, as "Netheridge," is to be known as Mrs. W. Buckler Lethbridge. Mr. LETHBRIDGE, of Riverdene, Cookham, Berks, who exhibited the variety in Scotland, was awarded a First-class Certificate by the above-named Society.

REDHILL, REIGATE AND DISTRICT CARNATION AND PICOTEE SOCIETY.—We are requested by the Hon. Secretary of the above to state that, owing to the postponement of the National Carnation Society's show, this show is also postponed to the 29th inst. The tickets already sent out hold good for that date.

CELLULOSE LABELS.—Mr. DOUGLAS ALLPORT, 108, Queen Victoria Street, E.C., sends us samples of a label which is neat and serviceable. "It is practically as permanent and as dirt-proof as porcelain. It is much handier to fix, and has the great advantage of always remaining in a readable position." We commend them to the notice of amateurs for their neatness. It is as well to remind them that they are very inflammable. Apply a match to them, and they are consumed almost immediately, and so perfectly that little or no ash remains. The labels can be attached to a stick or to the plant itself.

STOCK-TAKING: JUNE.—Considering how very much the Spanish-American war interferes with trade all round—and with that of this country in par-

ticular—the Trade Returns for the past month are not so unsatisfactory as might have been expected. The enhanced value of bread-stuffs keeps up the value of imports; exports of machinery and millwork have gone up in value and quantity, showing, or serving to show how much the engineers' strike of last year meant to the people of this country; but it will be a long time before increased output will have recouped us for our losses of last year. The value of the imports in June was £39,032,305—in June of 1897 it was £36,321,809, showing an increase of £2,710,496—the increased value of food being £2,317,109; dutiable articles fell away by £29,123. Apart from the tabular record, the other items showing an increase are metals, £113,401; chemicals, &c., £77,881; oils, £115,047; and manufactured articles, £579,386. The "summary" table yields the following additional (and usual) information:—

IMPORTS.	1897.	1898.	Difference.
Total value ...	£ 36,321,809	£ 39,032,305	+ 2,710,496
(A.) Articles of food and drink—duty free ...	12,879,583	15,196,692	+ 2,317,109
(B.) Articles of food and drink—dutiable ...	1,754,745	1,725,622	— 29,123
Raw materials for textile manufactures ...	4,498,012	4,889,464	+ 391,452
Raw materials for sundry industries and manufactures ...	5,025,197	4,487,625	— 537,572
(A.) Miscellaneous articles ...	1,044,379	976,990	— 67,389
(B.) Parcel Post ...	49,998	127,484	+ 77,486

While the value of bacon from America and Canada was increased by £137,000, lard and beef went up £132,280 and £122,415 respectively, Coffee to the value of £83,991, Cocoa rising some £20,164; and Tea and Tobacco falling off, the former by £97,971, and the latter £86,855. The value of cotton imports went up £700,554, and Hemp (mostly from the Philippines) £126,000. Wool fell off by £403,000. The increase in the value of manufactured articles is contributed by cotton, leather, silk, and iron goods. The figures for the six months show an increase of £10,750,505—thus, June, 1897, £225,245,246; June, 1898, £235,995,751. Here we make our usual statement respecting the imports of fruit, roots, and vegetables:—

IMPORTS.	1897.	1898.	Difference.
Fruits, raw:—			
Apples ... ..bush.	66,669	17,241	— 49,428
Cherries	158,056	166,012	+ 7,956
Plums	14,773	9,541	— 5,230
Pears	52	4	— 48
Grapes	4,469	5,018	+ 549
Unenumerated	189,886	220,526	+ 30,640
Onions	221,821	383,746	+ 166,922
Potatoes ... ..cwt.	1,138,938	1,533,374	+ 394,436
Vegetables, raw, unenumerated ... ..value	£208,171	£233,972	+ £25,801

It is worth noting here that our Canadian friends purpose sending us their spare tender fruits, for which we have room; as witness the fact that 30,000 boxes of Strawberries arrived the other day from France, which a very few hours sufficed to dispose of. This large arrival of fruit had no lowering effect on the market. There is a large increase in the quantity of Potatoes received from the Channel Islands. Those who may have Apples to sell will reap a well-deserved and unusual profit. Our American reports are to the effect that the prospects for Peaches are very fine indeed, and the same may be said for those of the Apple crop in many of the States. Turn we now to the

EXPORTS.

under which heading we find an increase amounting to £323,699—obtained thus:—June, 1897, £19,089,997; June, 1898, £19,413,696. After a series of deficits, it is gratifying to make this record. The chief improvement is found in machinery and millwork, also in steam-engines and agricultural and

textile machinery sent to various parts of the globe. As might be expected, the exports of mining machinery have not improved much. By the way, coal fell by 165,000 tons, but the value increased by £81,239. We exported beer and spirits about £48,000, in excess of the amount for June, 1897; and the value of manures went up £51,000. Bicycles fell away by some £42,354. Cotton goods, mainly to the Far East, went up £291,272; but woollen and worsted goods gave way £361,774. Our Irish manufacturing friends have once more a deficit to meet, linen manufactures having fallen off by £213,997. The buyers in America have decreased their demands to the amount recorded here. We have only to note in conclusion that the exports for the six months show a reduction of £1,902,273.

THE NEWCASTLE SHOW.—The Royal Horticultural Society, who in 1896 visited by deputation the York Floral Fête and the Chester Floral Fête, and last year the Shrewsbury Show of the Shropshire Horticultural Society, have this year selected one provincial centre only to thus officially visit, namely, Newcastle. It is to be hoped that the active patronage thus extended to the exhibition of the Durham, Northumberland, and Newcastle Botanical and Horticultural Society, will have the effect of contributing to the removal of the slight financial embarrassments from which it has suffered several years. This would be the more gratifying, because the Society has been so long established, its incorporation having taken place in 1824. Since that time it has done much to encourage horticultural pursuits, and now deserves the support it needs to strengthen it for future work. Many a fine exhibition has been held at Newcastle under its auspices, and we trust that better ones will have still to be held.

ROYAL SCOTTISH ARBORICULTURAL SOCIETY.

—The following letter has been forwarded to the Right Honourable W. H. LONG, M.P., President of the Board of Agriculture, &c.:—

"On October 23, 1895, you were good enough to receive a Deputation from the Royal Scottish Arboricultural Society, which submitted to you the views of the Society on certain matters connected with forestry in Scotland; amongst them was the desirability of acquiring a State forest-area for experimental and educational purposes.

In compliance with the wishes you expressed on that occasion, the President of the Society forwarded, in November 1895, memoranda by certain members of the council, which set forth their individual opinions as to what the necessary expenditure by the State might be, in connection with the proposed forest area. But the whole question has recently been fully considered by the society, whose views are embodied in the printed note which we are now authorised to submit for your favourable consideration.

In this note you will find quoted the opinions of distinguished foreign experts that the sylvicultural practices prevailing in Scotland are open to adverse criticism. It explained how these practices arose, and why it is now a matter of great importance that reforms should be introduced; and it is shown to be impossible to hope for such reforms unless practical demonstration can be afforded, by means of model forests, of the results which improved methods lead to.

After a brief statement as to the nature of the instructions given in the State Forest Schools of other countries, and as to the provision of practical training-grounds as necessary adjuncts of such schools, the opinion is expressed that existing circumstances hardly appear to warrant the immediate foundation of an independent school in Scotland, and that the only plan now feasible is to improve and develop the courses of instruction in forestry now conducted in Edinburgh, by the provision of a State forest within easy access from the city; such a forest, while serving as a model for landed proprietors, agents, and factors, throughout the country, and as a station of experiment and research, would also be available for practical training in connection with these courses.

It is estimated that a capital expenditure of £40,000 with an annual grant of £500, would suffice to provide the required area; and the concluding section of the note shows why privately-owned forests would not answer the object in view, and why the Society is therefore compelled to ask the Government to aid it in these its first efforts towards the improvement of Forestry in this country, by providing a State model forest in connection with the Forest School in Edinburgh. (Signed) FRED. BAILEY, President.

R. C. MUNRO FERGUSON, Hon. Sec.
R. GALLOWAY, Sec."

CISSUS DISCOLOR, though a common and hardy some trailer in our hot-houses, does not frequently produce fruits. Mr. GEO. CRAGG, of Percy Lodge

Gardens, Winchmore Hill, sends us a shoot carrying one fruit, and he has some others. The fruit is a black berry, about the size and shape of a small Pea.

VINCA MINOR.

THE fruiting of this species is so uncommon that we have deemed it of interest to illustrate (fig. 14) some small pods formed on a plant growing in a pot on a balcony, where its trailing branches are very elegant. The fruit consists of a double follicle, as is common in the Order. Only one seed is formed, though there are remnants of others.

The plant in question was dug up at Guisnes, near Calais, several years ago, and has been grown successfully in a pot ever since, forming a most elegant plant for a hanging-basket or similar purpose. A year or two ago the plant also fruited, but the fruit was destroyed by an energetic housemaid.

The flower is probably insect-fertilised, but we do not know what insect has effected the operation; one would deem it rare from the rarity with which the pods are formed.

STRAWBERRIES AT MAIDSTONE IN 1898.

AN expert called on us last week, and we had a "tasting" of Strawberries. They are grown by us in the open fields for the sake of securing plants; but a certain portion we allow to bear fruit for trial and comparison, and the notes we have made may be of interest to your readers. In our district the Strawberry came into flower early, and those beds which are on land that faces the east were much cut by the late May frosts, and those that occurred early in June. So much so, that many came "bull-nosed" (pinched at the ends), while the "king" or first flowers of others were cut, thus greatly retarding the crop, the low night temperatures, often down to 40° and 46°, helping to the same end.

We were enabled to gather the first fruits on June 24, and as the plants of Laxton's No. 1 were cut, Royal Sovereign was the first. It grew in a bed that faced west, situated under a hedge, and very fine fruit, too. We fear many other kinds suffered from the cold besides No. 1, for some which have never failed before were at the tasting not so good as usual. It may be interesting to your readers to know that, when planting new beds, we dress the land only with horse and cow-manure the first year, and from these plants we obtain our runners and pot-plants. The 2-yr.-old plants had a dressing before the final spring-hoeing of ichthemio guano, soot, basic-slag, and kainit, and although these dressings have assisted the 2-yr. plants to bear fruit at their best (we do not fruit the 1-yr. plants), we fail to see that one dressing was better than another—a very slight difference was observable in the foliage, but so far as quantity, quality of the fruit, and continuity of bearing are concerned, no difference can be observed, though all have been beneficial. Gardeners, therefore, might use any of those named with advantage which are obtainable locally, for seldom have all kinds been better with us—to generalise. The following varieties have done as well as usual, and are therefore trustworthy:—Royal Sovereign, which has borne thrice as heavy a crop as any other variety, and all the fruits have been large, even in shape, and of excellent flavour. If we had only this one variety, we should not do badly; but Vicomtesse H. de Thury, Sir Joseph Paxton, President, Auguste Nicaise, Kitley's Goliath, Countess, Auguste Boisselot, King of the Earlies, Sir Charles Napier, and Trollope's Victoria maintain their good character, and may be described as trustworthy varieties.

Among the less known varieties, Laxton's Leader takes a high position so far as crop is concerned, but in our opinion (and the expert agrees), the fruit is ugly, furrowed, and pinched; but although enormous in size, flavour is lacking. Laxton's Monarch is very liable to go blind, as some 20 per cent. of our plants never produced a truss of bloom, although they were vigorous and healthy, and the fruit has a very fine

appearance, bright, shining, and very excellent for market purposes, but the good flavour necessary in a garden fruit is lacking, while blindness is a serious drawback. We noted at Chiswick that about 80 per cent. were blind. It would be interesting to hear the experience of others, as no fruit is more influenced by soil and situation than the Strawberry.

We specially tested for flavour, and finally gave the palm to Dr. Hogg as the best, and Countess ran it a close second. Other grandly-flavoured kinds were La France, Edward Lefort, Laxton's King of Earlies, St. Joseph, President, Kitley's Goliath, Trollope's Victoria, Auguste Boisselot, and Vicomtesse; and among the less-known kinds, the white perpetual kind, Louis Gauthier, held a high position, although at the end of our tasting the expert said, "Well, although I have eaten such a variety, I find that four of Gauthier have disappeared with gratification!" We have no doubt this pinky-white kind will be largely planted. It is a splendid bearer now, and as it gives another set of fruit in the autumn, it must take a prominent place. Being a free grower, it requires plenty of room; fruits, sometimes measuring 2 inches across, are plentiful; it resembles Laxton's White Knight, but fruits freely.

Another coming sort is the new perpetual hybrid, St. Joseph; this has a fruit like a small Vicomtesse, but possesses a remarkably distinct Hautbois flavour, and will take a prominent position among alpine or autumnal varieties.

Veitch's Perfection, which has distinct and delicious flavour, has not sufficiently established itself to enable us to decide as to its character, but doubtless it will prove an acquisition as a late fruiter. Wonderful,

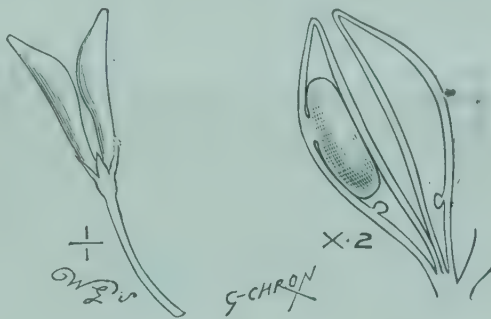


FIG. 14.—SEED VESSEL OF VINCA MINOR.

certificated at Chiswick, is very fine, and a great cropper. Grosse Lombarde is a very long-pointed fruit, with a very sharp acid flavour, but so far no advance; König Albert is a fine round fruit, ripening thoroughly, and of distinct and pleasing flavour—good for mid-season supply; Edouard Lefort, is a distinct advance on Grosse Sucrée, of the same character, but a better grower and bearer (A.M., R.H.S.); Souvenir de Bossuet, as recommended, is so mixed that we cannot remark on it, the majority consisting of the old discarded Competitor; New Dumbarton Castle is a close compact grower, and gives large fine-flavoured excellent fruit, evidently a good dry season variety; Walbuff, which is a continental variety, has grand foliage, is rather late, but very prolific; President Carnot of 1897, proves to be La France, which came to us in 1895, and is well worthy of the award given by the Royal Horticultural Society—it is a vigorous grower, and a standard variety. Mr. Carmichael has sent out several late kinds, mostly crosses from Waterloo; but we fail to find superior merit in Prince of Wales and Princess of Wales (1895-96). His other varieties are not yet in condition, and we will report later; they all show Waterloo blood, and seem to be good bearers. George Rundle has proved worthless. We will make a few notes of the later varieties.

It is among these that we may hope for improvement. At present Waterloo, Eleanor, and Elton Pine are the best. A few kinds have not proved good this year, namely, Gunton Park, Lord Suffield, Unser Fritz, Georges Lésoir, and Filbert

Pine, but generally the latter three are extra fine, but the Gunton Park seedlings have only once in five years been good, so that for our district we cannot recommend them, though elsewhere they succeed. Countess, however, is grand, and cannot be too highly recommended; it is a small grower, and we think that to plant 1 foot by 2 feet would answer best, as the land, if the rows are wider planted, gets so dried up that the fruit does not develop. The habit of the different kinds is interesting: we pulled one truss of the old (Grovent) "Scarlet" (the jam-maker's favourite) with twenty fully ripe fruits; while, to look at Auguste Nicaise, one fails to see fruit until the leaves are put on one side, when the largeness of the crop of fruit is a surprise—this variety is A1 for forcing, but as an out-of-doors variety it is best in a dry year, when its ample foliage screens the crop. Laxton's Sensation and Stevens' Wonder are quite discarded for want of flavour, while the old Black Prince is yet of the best quality, and cannot yet be discarded. Empress of India is discarded as being too small a cropper; and Frogmore Late Pine can only be grown with success in certain spots, such as a rich border on a northern aspect. British Queen must still be grown, and it is a grand fruit in heavy soils, and where a big crop is not looked for. Noble must now be discarded, although as a preserving fruit it is worth a place, as the jam made from it is very high in colour.

Taking the season so far, we can credit 1898 with three good novelties—Louis Gauthier, Veitch's Perfection, and St. Joseph; possibly the later ones may yet give us varieties worth noting. It is our custom to destroy all beds that are two years old, but then we grow chiefly for plants. A few may stand three years, for affording fruit for jam-making; but where grand fruit is desired, two years should be the limit of age. *George Bunyard & Co., Maidstone, July, 1898.*

HOME CORRESPONDENCE.

DICKSON'S JUNE KING BROCCOLI.—I agree with Mr. E. Burbury's remarks, p. 8, concerning Dickson's June King Broccoli, for with me this variety came on in succession to Broccoli Model. A friend of mine cut a fine head in his garden to take with him to the Royal Agricultural Show at Birmingham, on June 18. *J. Barnard, Mostyn Hall Gardens.*

GARDENING CHARITIES AND SELF-HELP.—Mr. Ingram's statement does not in any way contradict or disprove my opinion that a subscriber to the Royal Benevolent Institution is sure of nothing except a vote. Mr. Monro states, "Such candidate is certain to be either elected a pensioner, or receive benefit;" but this is not corroborated by the secretary. The conditions of my offer are clearly stated, and therefore it remains in abeyance. The best charity of all is to help people to help themselves, and if this were thoroughly done, there would be less need for the Royal Benevolent Institution. *Thos. Fletcher.*

GLÆOSPORIUM LÆTICOLOR, AND A REMEDY FOR IT.—If your correspondent "J. McClelland" sprays his Grapes with methylated spirit, using Stone's pneumatic sprayer, or some other instrument that will produce only a very fine spray, I think he will soon be rid of *Glæosporium læticolor*, taking care that there is not enough spirit on the berries to form a drop, or it will cause them to decay. I should advise spraying after the sun has gone off the vinery or during a dull day with a little air on. I tried it here on muscats, a sample of which I sent to you, making the same enquiry as your present correspondent a few weeks ago; with the result, that I have only lost a few berries that were no doubt then infested with the fungus. The spirit evaporates quickly, and the Grapes can be sprayed again in a few days if thought necessary. I shall be pleased to give my experience in detail if you or any correspondent deem it worth publicity. *W. Button, Highden, Pulborough. [Do, please. Ed.]*

SHIRLEY POPPIES.—I was fortunate in obtaining from the great evolver of the Shirley Poppies a packet of seeds. They are in flower now, and I do not know anything more superbly beautiful in the way of tints. Many persons rave about Orchids, and pay high prices for them; they rave

about Auriculas, Carnations, and many other flowers; but nothing yet has come up to the magical tints that the Rev. W. Wilks has evolved out of the common field Poppy. Here are some of these exquisite variations, although no pen is competent to describe their loveliness. Pure white, pure scarlet, pure crimson, and an infinite variation of shades of these colours; then crimson edged white, white suffused with crimson, with rose, with salmon, rose edged white, fiery salmon-scarlet, plum-rose edged white, white with the faintest suffusion of rose, palest terra-cotta edged white, and an infinity of other combinations, which no language is adequate to describe. One rarely sees these beautiful things at exhibitions; no one can see them there, for the delicacy of their texture is such that they soon droop when cut. Now what use can be made of these exquisite flowers? Two great uses: (a) to cut them early in the morning as soon as they open, and at once plunge their stems in a jug of water, and carry them inside the house for the decoration of the rooms, and arrange them in vases with delicate Ferns or other light foliage. Nothing yet invented in the way of flower-tints and forms can equal their fascinating beauty. They should preferably be placed in a cool room. (b) This use should be particularly studied by silk-weavers, for if the tints of the Shirley Poppies can be imitated in silk fabrics, a new departure would be initiated, and a striking effect would be produced. The silk weaver should have a small garden near his factory, and pay special attention to the cultivation of the Shirley Poppies, and get his artist, when they flower, to take their tints and variations into his cerebral convolutions, and dream of them. The parasol or sunshade would especially lend itself to this new departure in tints, for the form of the sunshade is not unlike that of the Poppy turned inside out, and its margin might be given the edging coloration of this extraordinary flower. Fancy the Henley regatta, or other summer gathering, with tens of thousands of sunshades imitating the colorations of these Poppies. Why, it would be like a fairy exhibition, and people would go rather to see the sunshades than to see the boat-races. *E. Bonavia, M.D., July 8.*

"GRIMSTONE'S HISTORY OF THE EGYPTIAN PEA."—I am wondering if there is a copy of this pamphlet in existence at the present day. William Grimstone had a herbary at Highgate, when it was a much more open spot than it is now, and a dépôt in High Street, Bloomsbury. The pamphlet set forth that the Egyptian or Mummy Pea was discovered by some officials of the British Museum in a vase presented to them by Sir Gardiner Wilkinson, the celebrated Egyptian traveller. Three of the Peas taken from the vase were presented to Mr. Grimstone by Mr. T. L. Pettigrew, who assisted in opening this relic of the time of the Pharaohs, supposed to be 2844 years old. The growth of this Pea, the pamphlet went on to say, is different to those of this country: the taste is unequalled, they boil much greener than ours, and are so prolific that they can be planted 8 inches apart. A bag of the value of half-a-crown would produce enough for a whole family. They require no sticks, and the bloom hangs in clusters; and an advertisement of the pamphlet, which appeared in May, 1852, contained this sentence:—"Remember, the only genuine is sold in bags, half-a-crown; three times the quantity, five shillings; and seven times the quantity, ten shillings." At this time the pamphlet had reached a 30th edition, according to the author. If Messrs. Vilmorin & Co. are correct in describing in their *Plantes Potagères* the Mummy Pea as identical with the Crown or Cluster, then there is evidence that this variety was grown long before Grimstone avers it was found in a mummy, for it finds a place among leguminous plants in Peter Laws & Sons' *Agriculturists' Manual*, published in 1836; and it had no doubt been in cultivation many years previous to that date. *R. D.* [A specimen of the "crown" or "mummy" Pea was shown at the Drill Hall, on Tuesday. *Ed.*]

TREE-VIOLET.—These had their spell of popularity a good many years ago, but it did not last long. Your correspondent "H. R. W.'s" brief description of their successful culture at Stuttgart will doubtless set a good many growers trying again. This is exactly as it should be, for Tree-Violets can hardly be said to have had a fair trial on the whole. Too much was expected of them at the start, and then they were often left to be devoured by green-fly, thrips, and red-spider. But no one can deny their beauty when skilfully trained, cultivated, and bloomed, though your correspondent's Tree-Violet was that most gene-

rally aimed at here, yet several other forms were grown and bloomed more or less successfully. At times the stems of the Tree-Violets were budding by a series of flowering shoots tied on it at regular intervals, converting the tree into a pyramid of bloom in due season. In other cases tall 6, 7, or 8-inch pots were used, and the Violets trained to droop over and cover the pots at regular intervals. These weeping Violets were welcome, and rained down welcome verdure, colour, and fragrance on all around. But, of course, most Tree Violets were dwarf standards from 8 to 18 inches high, like standard Roses in miniature with all their flowers, and their stiffness and formality did their work in driving them out of the rank-and-file of ornamental plants. The race for height also helped to kill them or check their growth. Not a few growers strove to make their Tree-Violets higher and yet higher, forgetting, or ignoring the fact, that Nature had made Violets creepers or runners, not climbers; and she avenged herself for our folly in forcing her runners to climb to such giddy heights with crops of thrip and spider, instead of fragrant Violets and fresh green leaves. One more point in the manufacture of Tree-Violets, on the surest, safest lines: the whole of the preliminary processes of propagation, forcing, and training should be done in the open air. Select the longest and stoutest runners, plant a foot or 18 inches apart, furnish it with a stout stake from 8 inches to 18 inches high, tie up the runners, stop, train, &c., and let the plant run on in its flowering quarters in the open until it is carefully potted up for blooming. This method not only saves a great deal of labour, but ensures clean and vigorous Violets studded with blossom-buds, and abundantly furnished with fine foliage to start with. It seems that Tree-Violets are popular at Stuttgart, as your correspondent is able to conclude with the assurance that there is a ready sale for the plants and at remunerative prices. Probably there is room for a considerable trade in Tree-Violets here if they were so cheapened and improved as to attract the interest and affection of the toiling millions in town and country. *D. T. Fish.*

THE GOLDEN BLACK-CURRENT.—I was glad to see "A. D.'s" note in favour of this highly ornamental shrub. That the Currants are good eating cannot detract from the beauty of its fine foliage. There is another almost equally beautiful Black Currant, that is the cut-leaved, that deserves a place in the shrubbery for its beauty and distinctness of foliage, while it is one of the most prolific varieties, and of excellent quality. In this connection I should like to recall the merits of the golden-leaved Gooseberry, *Ribes alpinum aureum*, and the golden-flowered or Buffalo Currant, *Ribes aureum*. There is also an earlier-flowering sweeter-scented variety of the type, known as *R. a. præcox*, or *fragrans*. This golden-leaved Gooseberry is a dwarf grower, and has a striking effect in the front of shrubberies or on rock-work. The golden-flowered Currant grows freely, from 5 to 9 feet high, and forms a highly ornamental shrub through April and May. These, and other Gooseberries and Currants would grow well in shrubberies and pleasure-grounds with the more brilliant flowering Currants, such as *Ribes sanguineum*, *R. atropurpureum*, *R. speciosum*, the Fuchsia-flowered Gooseberry, &c. Few visitors to the very pretty, well-cultivated Botanic Gardens at Cambridge can have failed to admire the group formed of Grape-vines, Blackberries, and Crabs. These throw floods of new light on the artistic power of numbers in imparting landscape effects. *D. T. F.*

VITIS HETEROPHYLLA VARIEGATA.—I herewith send you a few shoots of this Vine, from a plant growing out-of-doors at the bottom of a west wall in the garden of C. T. Parker, Esq., Quorndon Lodge, Loughborough, and planted by Mr. Powell in ordinary garden soil. It has not had the slightest protection for over three years. The same variety was a striking feature in Mr. Mees' 1st prize group at the York show held recently. *D. O. N.*

MARLEY HALL, EXMOUTH.

THE seat of J. Forbes, Esq., is situated on beautifully rising ground some three miles from the above town. The country here is well wooded, fine plantations of Scotch Fir and Larch, and deciduous trees affording splendid game covert and protection from winds. The Hall, which is a modern building, is considered one of the finest in the county of Devon. The land on which it stands being 300 feet above

sea level, commands extensive views of the south Devon coast, the Estuary of the Exe, the Haldon Hills, and a considerable portion of the adjoining county. Many are the journeys that are made by residents and visitors to some special points about the grounds or near by, to gaze upon these charming scenes, for here, perhaps, in as large a measure as any in the county, the beauty and charm of Devonshire scenery can be observed; the broad mouth of the river with its bustle, fishing-boats, and other trading vessels, adding considerably to the interest and variety.

The farm lands in the immediate vicinity are well managed by their respective tenants, and if one may judge by appearances the severe strain felt by farmers elsewhere is absent in these parts. Truly, the soil and situation are both helpful factors; given these, with good tillage and sufficient labour, there is not the least doubt the Devon climate is on the side of the farmer, and good returns may generally be expected.

The pleasure-grounds, kitchen-gardens, &c., and glass erections at Marley, were planned and laid out by the late nursery firm of Lucomb, Pince & Co., of Exeter, and truly their work affords evidence of great skill and extensive practical acquaintance with laying out and garden structures. The lawns in the vicinity of the mansion are beautifully undulated and adorned with beds of Rhododendrons and choice shrubs, which have grown with a vigour so great, that the pruning-knife and hook have occasionally to be used among them, otherwise the clumps and beds would meet and encroach upon some of the foot-paths. Many grand Conifers stand about on the grounds, including *Araucaria imbricata*, *Sequoia gigantea*, *Abies Pinsapo*, various Cypressess, *Picea*, *Thuopsis*, &c., many of these trees being from 30 to 40 feet high, perfect in shape, with branches in most cases sweeping the turf. The same can be said of some beautiful Beech-trees, than which there is in my judgment, none of so beautiful and interesting a character just now, when the young leaves of bright and shining green are covering a noble and symmetrical specimen with their attractive foliage.

Immediately adjoining the mansion is a broad terrace paved with tiles of various colours, and around this on a low stone-wall are some three dozen good size vases filled with *Pelargonium*, *Lobelia*, and other interesting plants in the summer. As the season advances, and these vases get well filled and full of flower, they are much admired, and certainly are very showy. Passing across a lawn, a panel garden, a large oval-shaped portion sunk some 8 feet below the level, bounded sloping banks of turf is reached.

The beds in the centre have a row of dwarf Roses running right through them, banked on either side with *Anemone japonica*, *Honorine Joubert*, and then some 3 feet on each side of these are planted several thousands of Begonias in distinct colours—scarlet, pink, yellow, and white, in lines right round the whole. When towards July and August these get well established, this garden is beautiful and interesting, the cool and partly-shaded portion seeming just the position in which the Begonia delights in Devonshire. I have found in this district that if these plants are placed in too sunny a position, they do not develop so well as in a shady, cooler, and correspondingly moister spot. These conditions, I know, would not be the most advantageous in a comparatively sunless or damp district.

Passing into the kitchen-gardens, of which there are two, with walls or glass erections on either side, the first house to attract notice is the one in which Bananas are grown, which is some 40 feet long, about 8 feet wide, the front portion constructed of glass sashes some 12 feet high in 6 feet lengths, the lower ones being used as doors, or easily moved for convenience when the beds are being renewed; the roof slopes downwards towards the back wall, so that the back part is about 9 feet 6 inches high, a very plain house, easily put up, but most useful for the purpose to which it is devoted. The floor space is divided by loose bricks into divisions or pits 5 feet square, and a narrow path runs along the front. In each bed a young sucker is planted, which grows quickly,

that in a comparatively short space of time stout stems, and immense clusters of fruits are developed. Recently measured a stem, and found it to be, at least from the ground, 2 feet in circumference. A rich yet strong loamy soil, with manure-water occasionally, and a top-dressing when the fruit-clusters are showing, add much to the number and the size of the fruit.

The range of vineries is exactly 100 feet in length, divided into an early house, a Muscat, and a late house. These vineries are 10 feet wide, the borders inside and out, the rafter is 18 feet long, the front wall-plate 2 feet from the ground. Nothing could be finer than the foliage, wood, and crop these Vines are now carrying. Grapes in the early house were ripe four weeks ago, and the bunches of black Hamburgs, dark in colour and capitally finished, are very commendable. The Muscat Vines are well set, and have been thinned. Here, again, I noticed bunches of good shape, which, when finished, will be very creditable to the gardener, Mr. D. Baird. The Vines in the late house were just setting their flowers, mostly Lady Downe's Seedling, and the fruit these usually are kept well into the early months of the year. *W. Swan, Exmouth.*

(To be continued.)

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JUNE 26.—Present: Dr. M. T. Masters, in the chair; Mr. Bennett-Poë, Rev. W. Wilks, Dr. Müller, Mr. Veitch, and Rev. G. Henslow, Hon. Sec.

Pyrethrum Flowers, arrested.—Mr. E. Ballard sent some flowers, "taken from healthy roots, full of bloom, but on which some of the flowers fade, owing to the shrivelling of the stalk some 2 or 3 inches below the flower. Last year whole roots were affected." It is difficult to pronounce without seeing the early stages, but the general opinion was that frost had checked the buds, and a fungus, possibly a *Pyrenopeziza*, followed. Buds of *Pyrethrum*, arrested in an early stage, appeared to have been spoilt by frost and wet living got into them.

Beeches Dying.—Mrs. A. C. Campbell Swinton, of Berryell, Dunse, Berwickshire, sent some bark, &c., showing much decay, taken from a very fine old Beech at Kimmerghame. It was described as having a cavity at a fork in which rain-water lodged, but since the tree is only 19 yards from the bed of the river, the suggestion that the roots have got into the cold soil by the side or beneath the river, with very little doubt, correct. Beeches preferring dry soil by nature, the above would be a sufficiently probable cause. Mr. Wilks described a case where, in a space of 50 by 20 yards, every shrub and tree dies after a time. The destruction began with a hedge, then Scotch Firs, Oaks, Ashes, and lastly Beeches of about forty-five years of age perished. The cause appeared to be a bed of white sand into which the roots penetrated, thus starving the trees.

Black Currant Shoots Falling.—Mr. E. Ballard sent specimens from a large plantation, which break off at a slight touch or by the wind. Dr. William G. Smith, who has examined them, reports upon them as follows:—"The Currant leaves bore a mildew, but other fungi were also present when I examined the material. The characteristic mode of attack pointed to a species of *Peronospora*. I have raised good crops of one on fresh portions of the leaves, and am following up the clue. If it be really a species of this family it is new to Britain, although one (*Plasmopora ibicola*, Schroeter) has been reported from the United States of America. I have observed the emission of motile swarm spores from the sporangia (so-called spores) of fresh material, and otherwise feel sure of the *Peronosporæ* nature of this fungus. As to remedy, I should recommend a spraying of Bordeaux Mixture or allied copper mixture. To a Black Currant plantation, this could be done by a knapsack-sprayer. Probably one can be had from the Strawson Company."

Cherry Leaves Diseased.—Specimens of the foliage was received from Mr. B. G. Berry, F.R.H.S., Scarbutts Manor, Houghton, Faversham, and submitted to Dr. William G. Smith, who reports as follows:—"I cannot make up my mind whether the fungus on Cherry leaves you sent last week is *Cylindrosporium padi*, Karst, or *Cladosporium mygdalearum*, Pass. Both are given as causing spots on foliage similar to that sent. The spores are different, but I get both forms (or something very like them) present. In any case the fungus is the cause of trouble. The disease is common in the United States, though I have no definite record of its occurrence here. It is not considered serious, and yields easily to spraying remedies. I am afraid at present the crop is too far advanced to allow of immediate treatment, but as soon as it is plucked Bordeaux Mixture could be sprayed on the foliage. Next year the spraying could be continued as soon as the foliage is strong enough to allow it. The preparation of Bordeaux Mixture and allied

fungicides I have already described in the *Gardeners' Chronicle* last August. It should not be used towards the season of ripe fruit, as it stains the cherries, but applied before and after is reliable."

Black Currant × Gooseberry.—Mr. W. Culverwell, of Thorpe Perrow, Bedale, sent a fruiting spray of this curious hybrid, figured in the *Gardeners' Chronicle*, September 3, 1892, p. 271, showing well the resemblance to the manner of fruiting in the Currant, though it was entirely without its scent. The fruit resembled small Gooseberries, but the leaves had no spines.

Four-merous Odontoglossum.—Mr. McBean sent a spray of *O. crispum*, in which all the four blossoms upon it had the two anterior petals adherent to the sepal between them, three points indicating the fusion. In addition to the above, the sepals fused with the petals were petaloid and the ovaries were aborted. In two flowers it was S_2 and in the other two, S_3 that was petaloid.

Tuberous Growth on Vine.—Dr. Masters exhibited a specimen of an out-growth not uncommonly met with on Vines; similar ones are occasionally associated with a multiplication of buds. It is probably caused by a puncture of some insect, which sets up a subsequent growth by hypertrophy. A similar out-growth is occasionally seen on *Maréchal Niel* Roses.

JULY 12.—Those who thought the display at the Drill Hall on Tuesday would be in extent or interest less than usual, owing to large exhibitions taking place at Wolverhampton on the same day, and Newcastle-upon-Tyne on Wednesday, were very greatly surprised. So considerable was the number of exhibits that it was found necessary to utilise the space in front of the well-known screen near the entrance. But, after all, the circumstance is partly explained by the fact of the postponed Rose exhibition being held on Tuesday, and if the Rose stands in the competitive classes had been removed, the number of what may be termed ordinary exhibits would have been fewer than usual. These Roses were magnificent; not only was there very great competition, but the blooms in the majority of cases were of the finest quality, and proved beyond doubt that the present Rose season is a most satisfactory one. Several new Roses were shown that were thought sufficiently good and distinct to be given Awards of Merit. Next to the Roses, we may mention the Sweet Peas as comprising an important feature of the meeting, there being no fewer than four collections of these lovely and fragrant flowers. Next must be put the Malmaison and other Carnations; indeed, we seem to be experiencing a boom in Malmaison Carnations! Well, these three flowers, Roses, Sweet Peas, and Carnations, were the best represented on Tuesday, and it is singular that each should be so eminently fragrant. There were fewer Orchids than was general earlier in the season; but of fruit, an increased quantity was shown, including a collection from the Royal Gardens, Windsor, and some excellent Strawberries and Cherries from Messrs. JAS. VEITCH & SONS. Messrs. VEITCH's new Strawberry, Veitch's Prolific, was recommended a First-class Certificate; and a new Cucumber from Mr. MORTIMER an Award of Merit.

Floral Committee.

Present: W. Marshall, Esq., and Messrs. H. B. May, Jno. Fraser, John Laing, Geo. Gordon, Geo. Stevens, W. Howe, J. F. McLeod, J. Fraser, J. D. Pawle, Chas. E. Pearson, James Walker, Chas. E. Shea, H. J. Jones, H. J. Cutbush, H. Turner, E. T. Cook, Chas. Blick, W. Bain, Ed. Mawley, C. J. Salter, and John Jennings.

ROSES.

The best collection of eighteen single trusses (amateurs), was from Mr. O. G. ORPEN, Hill Side, West Bergholt, Colchester, and the blooms were very good. We might specify *Cleopatra*, Mrs. John Laing, Ulrich Brunner, Marquise Litta, Kaiserin Augusta Victoria, Helen Keller, and François Michelin as the most distinguished. The 2nd prize was taken by Mr. T. B. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), who had a beautiful lot of even-sized, brightly-coloured blooms. There were twelve exhibitors in the class, and, as may be imagined, the 3rd prize exhibit from Mr. C. J. GRAHAME, Wrylands, Leatherhead, also contained very good blooms.

The next class was one for an equal number of trusses, but open to the trade as well as amateurs. It was won by an exhibit from Messrs. D. PRIOR & SON, Myland's Nursery, Colchester, and the blooms generally were first-rate. Particularly noticeable were Ulrich Brunner, Helen Keller, Gustave Piganeau, Mrs. J. Laing, Mrs. W. J. Grant (a pretty specimen, but pale in colour), and Maman Cochet. Messrs. F. CANT & CO., Braiswick Nursery, Colchester, showed splendidly for 2nd place; and Messrs. PAUL & SON, The Old Nurseries, Cheshunt, were 3rd.

The 1st prize collection of twelve single trusses, distinct, from Mr. E. MAWLEY, was capital. It contained a superb bloom of *Caroline Testout*, and scarcely less meritorious specimens of *Marquise Litta*, Mrs. W. J. Grant, and *Suzanne-Marie Rodocanachi*. ALFRED TATE, Esq., Downside, Leatherhead, was 2nd; and the Rev. A. FOSTER-MELLIAR, Sproughton Rectory, Ipswich, 3rd. There were ten competitors.

G. W. COOK, Esq., The Briars, North Finchley, won for six blooms, distinct, followed by J. T. THOMPSON, Esq., The

Laurels, Oak Lane, Bound's Green; and P. G. C. BURNAND, Esq., Hill Grange, Reigate.

The excellent variety Mrs. John Laing, shown by Mr. T. B. HAYWOOD, was the best variety exhibited in the class for nine blooms of any one variety of the H. P. or H. T. Rose. The blooms well portrayed this popular H. P. Rose. Mr. C. J. GRAHAME was 2nd, with the same variety; and Mr. OSMOND G. ORPEN 3rd, with magnificent blooms of *Kaiserin Augusta Victoria*.

There were many exhibits (fourteen) in the class for six blooms of any H. P. or H. T., but again the variety of Mrs. Jno. Laing was placed 1st, and the half-dozen blooms were from G. W. COOK, Esq.; ALFRED TATE, Esq., was 2nd, and E. M. BETHUNE, Esq., Denne Park, Horsbarn, 3rd, exhibiting Mrs. Jno. Laing in each case.

Teas and Noisettes.—The best collection of eighteen blooms of *Teas* or *Noisettes*, was one from Mr. ORPEN, in whose stand we might mention as superb specimens, the varieties *Cleopatra*, *Madame Cusin*, *Maman Cochet*, *Catherine Mermet*, *S. d'Elise Vardon*, and *Bridesmaid*; Mrs. E. M. BETHUNE was a capital 2nd, and the Rev. A. FOSTER-MELLIAR 3rd. The blooms in each of the exhibits were above the average in size and general good quality.

The similar competition, but open to nurserymen, was won by Messrs. D. PRIOR & SON, whose excellent exhibit was distinguished by superb blooms of *Bridesmaid*, *Maman Cochet*, *Jean Ducher*, *Caroline Kuster*, and *Ethel Brownlow*. Mr. GEO. PRINCE, of the Oxford Nurseries was 2nd, and excelled in the *Teas*, especially such varieties as *Comtesse de Nadaillac*. Messrs. PAUL & SON, Cheshunt, were 3rd.

The Rev. W. H. JACKSON, Stagsden Vicarage, Bedford (gr., Mr. R. Bonnett), won the class for twelve *Teas*, in not fewer than nine varieties, a Silver Cup accompanying the 1st prize in this case; J. T. STRANGE, Esq., Aldermaston, Reading, was 2nd; and Mr. E. MAWLEY 3rd.

Miss B. H. LANGTON, Raynham, Hendon, had 1st prize for six single trusses, in not fewer than four varieties.

The best variety in the single variety class was *Souvenir de Souv. A. Prince*, nine large blooms of which were shown by Mrs. O. G. ORPEN; *Madame de Watteville* from C. J. GRAHAME; and *Madame Hoste* from the Rev. W. H. JACKSON, were 2nd and 3rd respectively.

In the six single trusses of one variety class, the prizes were awarded to The Bride, *Souvenir d'Elise Vardon*, and *Maman Cochet*, in the order named.

Mr. CHAS. TURNER, Royal Nurseries, Slough, showed a dozen blooms of a new H. P. Rose, named *Edith Turner*, a pretty flower of faint flesh-colour, the older petals becoming white. The petals have good form, are rather short, and the variety is likely to be a popular one (Award of Merit).

MESSRS. FRANK CANT & CO., Braiswick Nursery, Colchester, made a grand exhibit of garden Roses in sprays, the selection of varieties being very choice. The distinct-coloured *T. Rose Souvenir de Catherine Guillot* was conspicuous amongst the varieties (Silver Banksian Medal).

Messrs. W. PAUL & SON, Waltham Cross, had a group of Roses in pots, and a variety of cut blooms in boxes. The plants in pots were dwarf, well-flowered, and excellent specimens; and the standards were also good. Messrs. PAUL had blooms of a H. P. Rose, named *Milton*, of a purple-red tint, very large, which to us appeared rather rough, but Mr. Paul predicts a popularity for it; also a H. T. Rose, named *Tennyson*, nearly white; *Wordsworth*, the result of a cross between a *Tea* and a China Rose, apparently a good garden variety, with reddish flowers; H. P. Waltham Standard was shown, and a very promising H. T. of distinct tint, and named *Exquisite* (Silver Banksian Medal).

LORD PENZANCE, Eashing Park, Godalming (gr., Mr. George Baskett), made an exhibit of very pretty hybrid Sweet Briars, and garden Roses in additional varieties (Silver Flora Medal).

F. W. CAMPION, Esq., Colley Manor, Reigate, had also a pretty collection of Roses, and was awarded a Silver Banksian Medal. Mr. CHAS. TURNER, Slough, who made a showy display of very useful varieties of Roses, obtained a Silver Flora Medal; and to Messrs. GEO. PAUL & SON, Cheshunt, who had also a group of Roses, including the fine single-flowered *Dawn* already noticed several times previously. An award of a Silver Banksian Medal was made.

CARNATIONS.

MARTIN R. SMITH, Esq., Warren House, Hayes, Kent (gr., Mr. Blick), again put up a group of Malmaison Carnations. These were good plants and flowers, albeit some of the blooms showed signs of having passed their prime. The varieties were *Calypso*, white or pale blush, warming towards the centre (Award of Merit); Mrs. Trelawny, smaller flower crimson; King Oscar, a good-sized flower of bright crimson; Mrs. Martin R. Smith, a large, beautiful, rosy-pink flower (Award of Merit); Lancer, one of the very brightest in colour; Scott and Mercia, both deeply-coloured varieties, differing only in shade; Lord Welby, and The Geisha, also brilliantly-coloured flowers of great merit; and Thora, almost pure white, very large (Silver-gilt Banksian Medal).

A group of Malmaison Carnations from DANIEL COOPER, Esq., Warren Towers, Newmarket (gr., Mr. T. Young), consisted of fine plants, apparently last year's layers, but potted on into 7-inch pots. Most of them had one expanded bloom of very large size, and the group was a decidedly good one (Silver Flora Medal).

Mr. JAS. DOUGLAS, Edenside Nursery, Great Bookham, made an exhibit of cut flowers of the newest and best varieties of Malmaison and other Carnations, including many raised by Mr. Martin R. Smith and himself. An Award of Merit was recommended to a pure white-flowering variety of Malmaison Carnation, named *Nell Gwynne*, but the collec-

tion included many other valuable varieties of the different sections, besides a few old Chelsea Pinks.

An Award of Merit was recommended to a perpetual flowering Carnation, named Sundridge, exhibited by Mr. F. TAPPER, Sundridge Park. This is a magnificent scarlet variety, the blooms being of exquisite form.

Mr. Whellan, gr. to the Duke of MARLBOROUGH, Blenheim Palace, Woodstock, and Mr. Geo. Reynolds, gr. to Messrs. DE ROTHSCHILD also showed new varieties of Carnations.

SWEET PEAS.

Sweet Pea exhibits included a most tasteful and fragrant display from Mr. HENRY ECKFORD, Wem, Shropshire. These, arranged in tall glasses, were very lovely; the few grasses mixed with the flowers, however, we thought hardly an improvement—the Pea-bine is more suitable. Some of the newest and most exquisite varieties we noticed were the following:—Fascination, of several shades of purple; Bouverie, pale pink; Lady Skelmersdale, white, with pale purple keel; Mrs. Dugdale, a lovely rosy-pink flower of various shades; Othello, deep brown-crimson; Sadie Burpee, pure white; and Duchess of Westminster, salmon-buff coloured. Other varieties, such as Lady Mary Currie, Prince of Wales, Duke of York, Lottie Eckford, Triumph, Prince Edward of York, Chancellor, and Mars, were displayed to good advantage (Silver Banksian Medal).

Mr. F. G. FOSTER, Brockhampton Nurseries, Havant, made a very fine exhibit of Sweet Peas, and the variety Aurora, with large rose-striped flowers upon a white ground, was given an Award of Merit. It is a capital variety, of a good colour. There were upwards of sixty varieties in this collection, and the flowers were all of good quality. An Award was recommended to Golden Gate, a variety named after a gate to one of the ports of Chicago, owing, it is said, to the flower opening similarly to the gates. It is an American variety—one of the lighter purple-coloured ones, but very variable. (A Silver Flora Medal was awarded the group).

Messrs. CARTER & CO., High Holborn, had a display of Sweet Peas, the flowers being put into small glass bottles, several only in a bottle, and six or eight bottles in each Eastern bulb-bowl, which was filled with moss. Some of the prettiest in this collection were Invincible, scarlet; Mrs. Gladstone, pale-pink; Mrs. Eckford, cream-coloured; Miss Hunt, and Invincible, carmine; Mrs. Sankay, white; Orange Prince, and Duchess of Edinburgh. These Peas were backed by finely-cultivated Delphiniums, the excellent strain being known as Wedding Bells (Silver Banksian Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, put up a collection of Sweet Peas, and being bunched in tall glasses, the lower parts of these were hidden by a groundwork of bracken fronds. There were six dozen varieties, and having been well cultivated, the flowers presented the varieties in excellent condition (Silver Banksian Medal).

OTHER EXHIBITS.

Exhibits of Ferns were made by Messrs. J. HILL & SON, Lower Edmonton, and Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton. In the former collection were some fine specimen plants of Davallias, Nephrolepis, and Adiantum Farleyense (Silver Banksian Medal); and Mr. H. B. MAY's group was composed entirely of species and varieties of Asplenium, there being as many as sixty-five different forms represented (Silver Banksian Medal).

Mr. MAY also showed plants of the white variety of Swainsonia galegifolia, and a profusely flowered specimen of the purple-flowered Exacum macranthum, generally so difficult to grow.

A hybrid Polystichum from P. angulare × aculeatum was shown by Mr. WM. MARSHALL, Auchinraith, Bexley, and was awarded a First-class Certificate. The plants carried fourteen or sixteen large fronds, and exhibiting characteristics from both parents; it is an interesting hybrid.

From N. N. SHERWOOD, Esq., Dunedin, Streatham Hill, S.W., were shown plants of the dwarf Cupid strain of Sweet Peas. These represented the varieties Eliza Eckford, rose-coloured and white; and Primrose, a name descriptive of the colour. The plants were in pots, and bore numerous flowers.

Mr. Bain, gr. to Sir T. LAWRENCE, Burford, Dorset, showed a few sprays of Philadelphus Lemoini Candelabra.

Messrs. KOSTER & CO., Hollandia Nursery, Boskoop, Holland, was awarded a First-class Certificate for Picea pungens glauca pendula, a magnificent plant of which, over 8 feet in height, was shown. The silver tinted foliage and pendulous branches were very striking.

Messrs. WALLACE & CO., of Colchester, had a fine display of Lilies, conspicuous being varieties of L. Thunbergianum, pardalinum, speciosum, &c.; also a few lovely Calochorti (Bronze Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., made an exhibit of blooms of varieties of Japanese Iris. These were exceedingly pretty, and the number of varieties exceeded fifty. Fine spikes of the yellow-flowered Eremurus Bungei were also shown (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, again staged a group of cut annuals, &c., of choice varieties in glasses, presumably for the Hurst Cup. The principal flowers used were Campanulas, Godetias, Candytufts, Linaria reticulata, Sweet Peas, Carnations, and some lovely Shirley Poppies. Messrs. Veitch had also sprays of Spirea bullata, the yellow-flowered Cytisus nigricans, Rubus canadensis rosea, and a few plants in flower of the pink Calla (Richardia Rehmanni). These had been lifted from the open ground, and the flowers were rather more pink in colour than we have previously observed in this rather disappointing plant.

Mr. MAY obtained an Award of Merit for Asplenium ornatum. This variety is a decided improvement upon A. Mayi, an earlier acquisition (figured in the *Gardeners' Chronicle*, p. 371 of our last volume), the fronds being more sub-divided, and the plant is consequently more light and graceful in appearance.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair, and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, W. H. White, H. Little, H. M. Pollett, A. H. Smee, H. J. Chapman, W. H. Young, Walter Cobb, H. Williams, W. H. Protheroe, S. Courtauld, H. Ballantine, E. Hill, and J. Douglas.

As usual at this season there was a falling-off in the number of Orchid exhibits. The only group of any extent was a very fine display of noble specimens of Cattleya Warscewiczii (gigas), sent by J. W. TEMPLE, Esq., Leyswood, Groombridge (gr., Mr. Bristow), and for which he was awarded a Silver Flora Medal. The group was made up of forty-three plants, bearing in the aggregate over 160 flowers. The different plants showed great variation, running from the large light-rose tinted form to the dark type known as Sanderiana. A noteworthy fact is that many of the plants have been grown from an importation made in 1883.

Sir TREVOR LAWRENCE, Bart., Burford, Dorset (gr., Mr. W. H. White), again showed the fine Vanda × Miss Joaquim (Hookeriana × teres), with a splendid inflorescence of twelve fully expanded flowers and three buds (Cultural Commendation); also Oncidium albo-verrucosum (provisionally named), with bright yellow flowers, having a white worted crest, and some brown markings on the sepals. It bore some abortive flowers after the manner of O. abortivum (Botanical Certificate).

HERBERT HICKS, Esq., Bramwood, Chelmsford (gr., Mr. Machar), showed a grand plant of Dendrobium Dearei, grown in his gardens for a period of four years, and now bearing leafy pseudo-bulbs over 3 feet in length. The plant bore thirteen spikes; the largest pseudo-bulb having three large racemes of pure white flowers to the number of thirty-three; and four spikes had already been cut. It was stated that when it flowered before, the plant was more or less in bloom from April until the following February. A Silver Banksian Medal and Cultural Commendation was awarded.

Messrs. HUGH LOW & CO., Bush Hill Park, showed the fine white Cattleya Gaskelliana alba, and another pretty bluish-tinted form; also Cypripedium × T. W. Bond, C. × Alice; Bulbophyllum Dearei, and a pretty rose-spotted form of Odontoglossum citreolum.

Mr. WILLIAM BULL, King's Road, Chelsea, showed Oncidium macranthum Chelsiense, a large form, with purple-tinted sepals, and a dark purple blotch at the base of the petals.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed Cattleya Warscewiczii var. Rothschildiana, a handsome and peculiar form, in which the bright purple labellum is devoid of the yellow patches seen on each side of the disc in the typical form.

Baron Sir H. SCHRODER, The Dell, Staines (gr., Mr. H. Ballantine), showed a branched inflorescence of a peculiar white form of Odontoglossum crispum, with broad ovate lip, bearing a few pale purple blotches in front of the yellow crest—probably, O. crispum Lehmanni.

Fruit Committee.

Present: Geo. Bunyard, Esq., chairman; and Messrs. Jas. H. Veitch, A. F. Barron, Alex. Dean, Geo. Wythes, H. Balderston, F. Q. Lane, and Robt. Fife.

Mr. Owen Thomas, gr. to the QUEEN, Frogmore, showed a collection of fruit consisting of thirteen dishes of Cherries, viz., Downton, Black Eagle, Frogmore Bigarreau, Archduke, Knight's Early Black, Elton, Royal Duke, Kentish, May Duke, Governor Wood, Late Duke, and Frogmore Early Bigarreau; four varieties of Peaches, including Violette Hâtive; two dishes Walburton Admirable, very large, but rather light in colour, and Grosse Mignonne; three dishes of Nectarines; and lastly, twenty-eight dishes of Strawberries, including fine fruit of the following varieties, viz.:—President, excellent; Keen's Seedling, Auguste Nicaise, Scarlet Queen, Aromatic, Vicomtesse Héricart du Thury, The Countess, Jas. Veitch, and Bicton Pine (white), seldom seen in good condition. A new Melon, Cambrian = Beechwood × Duchess, and Frogmore Selected Tomato completed the collection. A Silver-gilt Knightian Medal was awarded the exhibitor. The fruits of all kinds were the pink of perfection, and although the newer varieties of Strawberries took the eye for size and colour, the true test of dessert fruit, namely fine flavour, remained we opine with the older ones.

Messrs. J. VEITCH & SONS, Chelsea, had an extensive exhibit of dishes of fruit in season, branches of Black Hawk and Frogmore Bigarreau Cherries fruit laden, and trees in pots with ripe and ripening fruit upon them. Growing in pots were noted Empress Eugénie, May Duke, Elton, Nouvelle Royale, and Governor Wood.

Gathered fruits of Cherries, shown in square boxes, consisted of the varieties Governor Wood, Guigne d'Anonnay, Archduke, Elton, Black Hawk, Belle d'Orleans, Cleveland Bigarreau, Mammoth, Baumann's May, and Adam's Crown. All of these were the produce of pyramids growing in the open border.

Strawberries to the number of sixteen dishes were shown in old and new varieties, and we noted the following:—Sensation, La France, Lucas, Lord Suffield, Jas. Veitch, Ed. Lefort, Gunton Park, Auguste Boisselot, Waterloo, British Queen, President, Cardinal, Royal Sovereign, Elton, Exqui-

site, and Prolific, a variety raised between Empress of India and British Queen, which was awarded a First-class Certificate. Prolific is almost of British Queen shape, but bright crimson throughout, and it ripens to the tip. The form is either coxcomb or conical. Some bearing shoots of the variety were shown, most abundantly fruited; also some plants lifted from the open ground (a Silver Knightian Medal was awarded).

Several Melons were shown by various growers, but none seems to have satisfied the judges.

Mr. S. MORTIMER, the Nurseries, Rowledge, Farnham, showed five fruits of a Cucumber called Sensation, receiving a First-class Certificate. It is a handsome dark green-coloured fruit, with no ribs, and but little neck.

Messrs. LAXTON BROTHERS, Bedford, showed a seedling unnamed Strawberry out of Royal Sovereign, crossed with Commander, a large, light-coloured fruit of generally conical shape, and in regard to flavour it leaves something to be desired. Leader was another variety, shown in extremely fine samples. The firm showed Pea Thomas Laxton, a green, narrow, and well-filled symmetrical-shaped pod.

Mr. H. ECKFORD, Wem, Salop, showed a number of new varieties of culinary Peas, but there was apparently nothing that was considered by the Committee as being improvements on existing varieties.

Mr. BAIN, gr. at Burford Lodge, Dorking, showed Peach Royal Charlotte, of very fair size for the produce of a tree thirty years old (Vote of Thanks).

Messrs. H. CANNELL & SONS, Swanley Junction, showed ten dishes and varieties of Peas, including such big-podded ones as Lord Mayor, Epicurean, Stourbridge, Gradus, and Duke of Norfolk (Cultural Commendation).

Miss RIDGE, Highfield, Staines (gr., Mr. G. Lane), showed six bunches of Black Hainburgh Grapes, of so good a quality, and large and well finished, that they were considered to be worthy of a Bronze Banksian Medal.

The Maharajah of Gwalior showed dried Cabbage, Cauliflower, Carrot, and likewise in a soaked state, as prepared for cooking. These were prepared by Mr. Maries, Superintendent of the State Garden, Gwalior, India. Such preparations are intended for use during the rainy season in India, when culinary vegetables are scarce.

Messrs. J. CARTER & CO., 143, High Holborn, exhibited fifty dishes, in as many varieties, of Peas, being awarded a Silver Banksian Medal.

Lecture on Peas.

In the afternoon a lecture upon Peas was delivered by Mr. N. N. SHERWOOD, the well-known head of the famous Hounsdlitch seed firm, Messrs. Hurst & Son. Mr. A. SUTTON (Reading) occupied the chair, and was supported by Mr. HARRY J. VEITCH. "The Ancient History of the Garden Pea" would be a very suitable designation of the carefully-prepared paper read by Mr. Sherwood. Commencing at a date more than 2000 years ago, Mr. Sherwood gave the results of painstaking research as to the very earliest mention of the Pea in horticultural, scientific, and other works. These, as might be expected, are exceedingly fragmentary, and our ignorance of its native country, though regrettable, is by no means surprising in the case of a plant that has been cultivated almost everywhere; and in certain places, for such an indefinite period. Mr. Sherwood declared that no evidence is forthcoming that the Pea was cultivated either by the ancient Egyptians or by the Hebrews; but as Mr. Sutton afterwards pointed out, there are Peas in the museum at Cairo that have been taken from Egyptian mummies, and though the old legend respecting the mummy Pea is now very properly discredited, there remains the fact that Peas (though these have never germinated) have been taken from the mummies. Treading upon ground a little firmer, it was stated that the Pea was introduced to China at the end of the sixteenth century, but as early as 1066 it has been described (said the lecturer) as one of the chief vegetable crops in England. It was in the sixteenth and seventeenth centuries, however, that frequent mention of garden Peas was made by Gerard and other writers, and photographs were shown of several Peas, illustrated in Gerard's *Historie of Plants*. At the end of the eighteenth century, and through the work of Mr. T. A. Knight, who was President of the Horticultural Society of London, the first wrinkled Peas were obtained; and as these are the parents of the excellent wrinkled Marrowfats of the present day, we are very greatly indebted to Mr. Knight. Consequently, the Knightian Medals that the Royal Horticultural Society now award should be much prized, inasmuch as they are in memory of a man who, in regard to Peas and many other garden plants, did excellent experimental work. Mr. Sherwood read a quotation from a paper by Mr. Knight in *Philosophical Transactions*, 1799, in which was explained the history of the production of those early wrinkled Peas; but it was in 1787 that Knight made his first experiment, and this was performed upon a plant that had ceased to be productive, presumably, because self-fertilisation did not take place. The cross-fertilisation and selection that eventually enabled Knight to send out his wrinkled varieties, being fully recorded in the *Transactions*, the origin of the strain is better understood than many equally important developments that have been obtained in other plants, but of which no published details are available. After quoting several lists of Peas published by Miller and others in the early years of the present century, Mr. Sherwood said that in 1850, Dr. McLean, of Colchester, was busy in raising new Peas; and several of these, including Epicurean, were introduced by Mr. Turner in 1859. Thomas Laxton and Mr. Eckford, of Wem, had subsequently

ved much success in the raising of improved varieties garden Peas; and to Mr. Culverwell also did we owe a debt for successful work done in the same direction. Messrs. Sutton & Sons had sent out some first-rate Peas of the last ten years, such as May Queen, Excelsior, Jubilee, Perfection, and Late Queen. There had been improvement effected in fruits, flowers, and vegetables of the Victorian era, but the Pea furnished the most convincing evidence of development during that period. Sherwood then gave a little information as to the means by the seedsmen to procure true seeds for sale, and referring to the dying-out of inferior varieties, mentioned there are something like 625 names of Peas this year, so lately were there new varieties sent out—or, added Mr. Wood, old friends with new names. He was convinced the number of names could be advantageously very materially reduced. Mr. Hurst's firm had now as many 10 rows of Peas in their trial grounds in Essex.

The process of cross-fertilisation was next explained, in the one essential precaution to prevent self-fertilisation, by means of the early removal of the anthers. The timing pod might contain six Peas, and each of these would be likely to differ in some respects from each other. They should be sown separately, and the produce from each sown in rows; then by careful selection during a few years, the characteristic quality of each variety may be ascertained, fixed, and probably increased.

After some remarks by Mr. Veitch, Mr. A. Dean, and Mr. Ford, the Chairman (Mr. Sutton) referring to the unique position in the "Seed" world held by Mr. Sherwood, said the Society was fortunate in having a lecture upon the Pea from one so eminently qualified to speak of it. Though the story of the mummy Pea (*Pisum unbellatum*) was a discredited legend, there is, said Mr. Sutton, sufficient evidence Peas were actually put into mummies, and he was sure that they cannot be otherwise traced in ancient Egypt.

GLOUCESTERSHIRE ROSE.

JULY 30.—The tenth annual exhibition was held at Gloucester on the above date. The collection of forty-eight varieties from Messrs. A. DICKSON & SONS, of Newtownards, Down, were most excellent, and contained thirteen varieties raised by themselves. Of the seedlings exhibited, which the highest Awards had been given by the National Society, Miss Bessie Brown won the Gold Medal at this year, Ulster last year, Countess of Caledon in 1897, and Mrs. W. J. Grant in 1895. Messrs. DICKSON also in Teas, closely followed by Mr. JOHN MATTOCK of Oxford.

In the open classes, the most attractive collection of Roses on show was one of twelve blooms of Mrs. W. J. Grant. This year Messrs. DICKSON won seven 1sts with the same collection, out of as many competitions.

In the classes for Gloucestershire amateurs, the entry was excellent. The Gold Medal given by the Society was awarded to Mr. E. C. HOPKIN, of Hucclecote, for a splendid collection of twelve varieties. The 1st prize, given by the Mayor and Corporation of Gloucester, was secured by Mr. T. THORPE, Wotton, with twelve lovely blooms.

A piece of plate given by the ex-high-sheriff for the best of twelve Teas, distinct, went to Mr. CONWAY JONES, of Hucclecote, as did also a Silver Medal, given by the Society for the best Tea Rose—Niphetos. A Silver Medal for the best hybrid was won by Mr. LANE, of Quedgeley, with a Teas and Bowyer.

A conspicuous and attractive feature of the show was the sections of garden and Moss Roses shown by Mr. JOHN MATTOCK and Messrs. HALL & PROSSER, of Malson, Gloucestershire. The cultivation of these Roses has been much encouraged by the Society.

In addition to the above-mentioned prize-winners, in the classes for nurserymen, Messrs. TOWNSEND & SON, Worcester, secured a couple of 1sts for thirty-six varieties (single trusses), twelve varieties (three of each); and two 2nd prizes for twelve varieties (single trusses, Tea or Noisette), and twelve varieties (three of each, Tea or Noisette). Messrs. PEWTERESS & SONS, Hereford, were awarded a 2nd prize for eighteen varieties of Teas or Noisettes.

CHELMSFORD AND ESSEX HORTICULTURAL.

JULY 6.—With Captain F. H. G. CRUIKSHANK as President, and by an active committee, with the indefatigable Mr. T. WEEKS as Honorary Secretary, the shows of this Society have steadily improved. Last year the weather was propitious, but the present show, which was held in the Recreation Ground, instead of being arranged in private grounds, as formerly, had the advantage of very delightful weather, and consequently was very largely patronised.

The show, in the opinion of most persons, was generally thought to be the best that has as yet been held under the auspices of the Society, both as regards the competition and the general arrangement. It is noteworthy that the classes for plants and flowers only one class (Violas) failed to secure entries, and the whole of the entry schedule only had three or four such instances. The classes were well filled, and contributed the most attractive feature in the show, the 1st prize, dinner-table decoration of Mrs. C. POTTER; the 2nd, of the Misses DENNIS and FINCH; and the 3rd, of Miss B. REMNANT, being truly artistic arrangements, and several of the others so good as to give

the judges considerable trouble. The President's Cup for six stove and greenhouse plants was secured by Mr. J. Burrell, gr. to W. W. DUFFIELD, Esq., Broomfield, who also carried off about a dozen other leading prizes. Other very successful competitors were Mr. T. BRAZIER, gr. to Mrs. GRAY, of Chelmsford; Mr. W. HAMMOND, gr. to A. PARRY, Esq., Margaretting; and Mr. H. HOLLOWAY, gr. to G. H. BAXTER, Esq., Hutton Park; the last-named securing the 1st prize for a group arranged for effect with a very beautiful arrangement.

Roses were a great feature, the 1st prize for thirty-six distinct single trusses falling to Messrs. F. CANT & Co., of Colchester, who staged a magnificent lot; the 2nd, Mr. B. CANT; and 3rd, Messrs. PRIOR & SON, being well in competition.

In the class for twelve, three trusses each, Mr. B. CANT came in 1st, Messrs. PRIOR & SON 2nd, and F. CANT 3rd.

In the amateurs' classes (Roses), Mr. H. B. LONDON, Sheffield, took most of the 1st prizes. Other fine features in the Show were a very beautiful and extensive group staged by Messrs. SALTMARSH, of Chelmsford; a showy group of hardy plants, by Messrs. W. PAUL & SON, Waltham Cross; a very beautiful and interesting group of hardy plants, by WALLACE & Co., of Colchester, in which the charming forms of *Mariposa Lily*, which they grow so well, was an attractive feature.

DEVON AND EXETER GARDENERS.

JULY 6.—The seventh annual excursion was made on the above date in brilliant weather, about sixty members and honorary members taking part in it.

On arrival by train at Tavistock, several interesting places in that historic town were visited. After lunch, the party proceeded by bridle to Endsleigh, the charming Devonshire seat of the Duke of Bedford, about eight miles from Tavistock.

On arriving at Endsleigh, Mr. Yole, the Duke's gardener, led the visitors by winding-paths along the cliff side down into the valley, where "The Cottage" lies nestling amid a sylvan Paradise. The extent of the place may be gathered from the fact that there are about 100 acres of pleasure-grounds, a 7-miles' turf-gallop around the woods, and about 20 miles of paths and roads within the demesne. Some of the peeps from the cliff-walk show miles of woods on either side, with Endsleigh in the valley, and the Tamar meandering far beneath, and they were quite enchanting.

The house is approached by a lawn in the most perfect condition, overlooked by a terrace walk, canopied with Roses on an overarching trellis. Bold overhanging rocks are seen clothed with *Rhododendrons*, *Ivies*, and underwood of various species. Among the specimen trees was one of *Abies Douglasii*, over 80 feet high, and 6 feet in diameter; the tree had recovered from a snowstorm which broke down its branches in 1890. A fine *Liquidambar*, 50 feet high. Of Bamboos, *Phyllostachys nigra*, 18 feet high; *P. viridi-glaucescens*, and *P. aurea*, were very fine. *Spiraea Lindleyana* was 14 feet to 15 feet through; *Sequoia japonica*, and a grand Weeping Beech of about 60 feet high, with pendulous branches dropping sheer by the side of the trunk, was a striking specimen. *Salisburia adiantifolia*, *Cryptomeria elegans*, *Retinospora plumosa*, *Gunnera manicata* with leaves 7 to 8 feet across, *G. scabra*, *Osmunda regalis*, *Paulownias* and *Catalpas*, *Photinia serrulata*, *Pinus Strobus*, and many other fine trees and plants were growing luxuriantly in ideal situations.

The *Rhododendrons* which clothe the rugged slopes had already bloomed. A cascade, or rather, a series of cascades, in a sequestered dell under "The Cottage," gave a picturesque aspect to the place. A grotto exceedingly rich in shells and minerals was visited, a hermitage-like dairy, and a verandah paved with sheep knuckle-bones, proved interesting to the visitors. There is very little glass, Endsleigh depending upon its out-of-door effect for its attractions, which are undoubtedly great.

WOLVERHAMPTON FLORAL FETE.

JULY 12, 13, 14.—Wolverhampton scored another gratifying success on the occasion of the tenth annual exhibition, which took place on the above dates in the West Park. Six broad, long tents were required to accommodate the exhibits. How prosperous the exhibitions have been is shown by the fact that during the past ten years the sum of £4,000 has been realised, a good proportion of which has been devoted to embellishing the West Park. It was the general opinion that the exhibition was one of the best ever held in Wolverhampton.

PLANTS.

The huge tent in which the specimen plants were staged was a beautiful picture of stately Palms and plants. The veteran Mr. CYPHER was again triumphant in the class for sixteen plants. He had as a background magnificent *Kentias*, and a huge *Latania*; two brilliant *Codiaeums* fringed these, and then a line of flowering subjects, foremost the big example of *Phenocoma prolifera* Barnesii, *Allamanda nobilis*, *Ixora salicifolia*, *Statice profusa*, *Bougainvillea glabra*, &c. Mr. W. FINCH, Coventry, was a good 2nd. Mr. W. VAUSE, Leamington, 3rd.

With six plants in flower, Mr. CYPHER was again 1st, staging very good examples of *Erica ventricosa* Bothwelliana, *Allamanda nobilis*, *Statice profusa*, *Ixora Williamsii*, and two others. Messrs. FINCH and VAUSE, who had in the main similar subjects, were 2nd and 3rd.

Mr. CYPHER was the only exhibitor of eight exotic Orchids, and had good examples of *Vanda cœrulea*, *Cattleyas Gaskelliana* and *Mossiae*, *Lælia purpurata*, *Sobralia macrantha*, *Oncidium macranthum*, *Masdevallia Harryana*, &c.

Palms in sixes were an imposing feature. Mr. CYPHER again 1st, with *Kentias Forsteriana*, *Belmoreana*, and *Australis*, *Livistona chinensis*, *Phoenix rupicola*, and *Thrinax elegans*. Mr. Cryer, gr. to G. H. KENDRICK, Esq., Birmingham, was 2nd.

For six fine-foliage plants, Mr. CYPHER again triumphed. He had two fine *Kentias*, *Latania borbonica*, two richly-coloured *Crotons*, and a *Dasyliro*.

Mr. M. CAMPBELL, Blantyre, had the best six exotic Ferns, all good specimens.

Groups arranged for effect were a great feature, and the square ground plan, with its scalloped sides, is now very largely followed. In the class for groups covering 450 feet, Mr. CYPHER was 1st, and the judges expressed the belief that it was one of the very best he had ever staged: all the details were elaborately symmetrical, and the artistic touches charming. Mr. J. E. KNIGHT, nurseryman, Wolverhampton, was 2nd; and Mr. W. VAUSE, 3rd; the groups in both cases being constructed on similar lines. In the gardeners' division the best group of 350 feet came from Mr. CRYER; Mr. R. Sharpe, gr. to H. LOVATT, Esq., was 2nd, both very well executed indeed. There were other classes for 200 feet groups, and the whole of them occupied a considerable space of ground.

The best six stove and greenhouse plants in the amateur's division came from Mr. H. Fewkes, gr. to T. CLAYTON, Esq., he having well grown and flowered examples; Mr. A. CRYER, Berrow Court Gardens, Edgbaston, was 2nd. Mr. Fewkes also had the best six exotic Ferns, and Mr. SHARPE came 2nd. *Caladiums* were in the form of nice well coloured specimens, and collections of *Begonias* were represented by good plants of the tuberous-rooted section.

Roses, &c.

The great centre of attraction at Wolverhampton is in the Rose tent. Roses are always presented to view at Wolverhampton in their best form. There were four exhibits of seventy-two blooms each, and some very fine blooms were staged. The veteran, Mr. B. R. CANT, of Colchester, held his own in this class, staging brilliant flowers, fresh, clean, and bright, chief among them Helen Keller, Catherine Mermet, Golden Gate, a lovely Tea; Gustave Piganeau, Madame de Watteville, Mrs. W. J. Grant, an imperial pink tint, exquisitely vivid; Auguste Rigotard, Prince Arthur, Charles Lefebvre, La Fraicheur, most attractive; Mrs. Paul, very fine; Ernest Metz, Charles Lefebvre, Marguerite Boudet, a delicate silvery white Bourbon; Countess, a lovely H.T., and old General Jacqueminot, in superb character, &c. Messrs. HARKNESS & SON, Bedale, were 2nd, with flowers a little larger in size, some of which lacked refinement; and Messrs. F. CANT & Co. were 3rd. Messrs. HARKNESS & Co. were 1st among competitors for forty-eight varieties. Messrs. F. CANT & Co. were 2nd, and Mr. B. R. CANT, 3rd.

In the class for eight distinct varieties, three blooms of each, Mr. B. R. CANT came in first, his finest blooms being Marchioness of Londonderry, Mrs. J. Laing, Ulrich Brunner, Helen Keller, and Mrs. W. J. Grant, the latter very fine. 2nd, Messrs. HARKNESS & SON; 3rd, Messrs. F. CANT & Co.

Messrs. J. TOWNSEND & SON, Coventry, had the best twenty-four varieties, very bright and fresh; Mr. J. MATTOCK, Oxford, was 2nd.

The class for twelve new varieties of the past three years, was full of interest, and here Messrs. FRANK CANT & Co. were 1st with charming blooms of Helen Keller, Ellen Drew, Countess of Caledon, Ethel Richardson, Lawrence Allen (a very good Rose), and Muriel Grahame, as the leading blooms. 2nd, Messrs. A. DICKSON & SONS, Newtownards, Belfast 3rd, Mr. B. R. CANT.

The best twelve blooms of a dark Rose were those of Gustave Piganeau, from Messrs. J. TOWNSEND & SON; Messrs. F. CANT & Co. were 2nd, with Horace Vernet.

The best twelve blooms of a light Rose were those of Mrs. J. Laing, from Mr. B. R. CANT; Messrs. A. DICKSON & SONS were 2nd, with Bessie Brown, an ivory-white of considerable promise.

The best collection of twelve Tea Roses came from Mr. J. MATTOCK, a very good collection; Messrs. FRANK CANT & Co. were 2nd.

The most decorative arrangement of Roses was a class which brought four exhibitors, the 1st prize going to Messrs. PERKINS & SONS, who presented the flowers to view in various ways, and made a very pleasing stand.

Other cut flowers were represented by very fine stands of stove and greenhouse species, Mr. J. CYPHER taking the lead, Orchids playing a very important part in these. There were also bouquets, the shower pattern prevailing, and here the chief honours went to Messrs. M. JENKINSON & SONS, Newcastle, Staffordshire, and Messrs. PERKINS & SONS, Coventry. An arrangement of hardy border flowers occupied a space of 36 feet, and brought some imposing banks of flowers, that of Messrs. W. F. GUNN & Co., Sunderland, won the 1st prize. It consisted of huge bunches of *Campanulas* and other hardy species of fine quality, arranged with considerable taste. Messrs. BARR & SON were 2nd. A good portion of a tent was occupied by dinner-tables, arranged for effect, that set up by Messrs. W. JENKINSON & SON, Newcastle, finding most favour with the judges.

There were classes for fancy Pansies, laced Pinks, and Carnations, in which some very good flowers were staged; one class which attracted a large amount of interest was for the most tasteful arrangement in Pansies and Violas. No class in the whole show caused so much difference among

the judges; and after a good deal of consideration Messrs. W. T. GUNN & Co. were placed 1st; Mr. GOODACRE 2nd; and Messrs. JONES BROS. 3rd. We considered the group placed last decidedly the best.

Mr. Henry Eckford's special prizes for Sweet Peas brought good collections of the leading varieties, set up in handsome bunches.

The Hawley Silver Challenge Cup, given for a display of plants and floral arrangements, was won for the third time by DICKSONS (LIMITED), Chester, and now becomes their property. It was a very fine display indeed, and not the least feature of interest was a tank of blooms of some of the fine varieties of *Nymphaea Mariacea*. Messrs. J. H. WHITE & Co. and others also set up fine collections.

FRUIT AND VEGETABLES.

Some very good fruit was staged. The best collection of nine dishes came from Mr. J. H. GOODACRE, Elvaston Castle Gardens, who had Black Hamburg and White Muscat Grapes, two fine dishes of Peaches, the same of Nectarines, a fine Queen Pine, a perfect dish of Lady Sudeley Apple, Melon, and Strawberries. Mr. T. BANNERMAN, Blithfield Gardens, Rugeley, was 2nd.

Mr. GOODACRE had the best four bunches of Grapes, having Gros Maroc, Black Hamburg, Muscat Hamburg, and Madresfield Court, all well finished. Mr. J. Read, gr. to Lord CARNARVON, was 2nd.

The best two bunches of white Grapes was Muscat of Alexandria from Mr. T. JORDAN, The Gardens, Impney Hall. Mr. GOODACRE had the best two bunches of black Grapes, having a finely finished Muscat Hamburg.

A very fine dish of Royal George Peaches won the 1st prize for Mr. BARNES, Eaton Hall Gardens, had the best dish of Nectarines, staging splendid Elruge. Strawberries in three and also in one dish were finely shown. There were several Melons, but they appeared to lack flavour; and there were also good Tomatoes, in red and yellow varieties.

In response to the special prizes offered by Messrs. Sutton & Sons, Webb & Sons, and Messrs. Dobbie & Co., excellent collections of vegetables were staged; and, the season considered, they were also in good character in the amateurs' and cottagers' divisions.

NON-COMPETITIVE EXHIBITS.

A very large number of miscellaneous contributions of plants and flowers was staged by various exhibitors, and occupied a considerable space of tabling. Mr. HENRY ECKFORD set up a remarkable collection of Sweet Peas; Messrs. J. PEED & SONS, Norwood, had a large ground group of Caladiums, and also one of Begonias; Messrs. J. LAING & SONS, Forest Hill, contributed some of their fine strain of Begonias; Mr. HENRY DEVERILL, Banbury, had a very fine bank of cut flowers; and so had Messrs. WEBB & SONS, who added vegetables in considerable variety; Messrs. W. & J. BIRKENHEAD had a table of Ferns; Messrs. HEWITT & Co., and T. B. THOMSON & Co., both of Birmingham, contributed cut flowers, &c., and several others also.

DURHAM, NORTHUMBERLAND, AND NEWCASTLE-UPON-TYNE BOTANICAL AND HORTICULTURAL.

JULY 13, 14, 15.—The annual show of the above Society was held on the above dates in the Recreation Ground, North Road, Newcastle, and the Committee is to be congratulated on a very fine show, although in many respects not very extensive; still, nearly everything shown was of good quality, with the exception of the groups, in which, although there were four entries, there seemed throughout to be a lack of quality and finish.

The arrangements of the exhibits are excellent, and the idea of having the three tents merged into one is a very commendable one, as, while being easier of access, it admits more air, and the oppressive feeling so often experienced was entirely absent.

This year the Society, being honoured with a deputation from the Royal Horticultural Society, seemed to have made a special effort, and the result certainly justified it, as it was the opinion of visitors that never had a greater number of people been present than on the opening day.

Groups.—On entering by the main opening, the group of Messrs. W. FELL & Co., of Hexham, on the right, at once attracted attention. It contained good Conifers, and was interspersed with herbaceous flowers, in the centre being a small but choice lot of greenhouse plants. On the opposite side, Messrs. ROBSON & SONS, of Hexham, had staged a pleasing exhibit, comprising good varieties of Conifers, dotted among which were Maples, the whole faced with *Euonymus*, *Periwinkle*, and other dwarf plants. In the centre of the opening bay were arranged the specimen flowering plants, but these were not so fine as one would expect at this show.

Among groups staged not for competition, the following were noteworthy:—A fine group of Malmesbury Carnations, exhibited by Mr. Goodacre, gr. to Lord HARRINGTON, of Elvaston Castle, Derby; also a small but choice collection of Carnations from Messrs. LAING & MATHER, of Kelso.

Undoubtedly one of the premier exhibits of the show was the very excellent group of choice plants staged by Messrs. JAS. VEITCH & SON, Ltd., of Chelsea, for which the firm were awarded a Gold Medal by the Royal Horticultural Society. The group contained many examples of well-grown plants, including splendidly coloured Crotons, very charming Caladiums, a nice lot of *Rhododendron javanicum* varieties,

also Carnations, an excellent *Crassula* (*Kalosanthes*), and a good pink Carnation named *Exile*; exquisite Orchids, and charming pans of Veitch's Lily of the Valley.

Following this was a good representative bank of Cannas from Messrs. H. CANNELL & SON, Swanley (Silver Flora Medal, R.H.S.), containing large spikes of Burbank, Flamingo, Amiral Avelan, Souvenir de Antoine Crozy, &c.

Messrs. W. PAUL & SONS, of Waltham Cross, filled a space of 25 feet with hand-cut Roses, arranged in large hampers, and forming quite a blaze of colour. They showed among other fine blooms of Mrs. John Laing, Gloire Lyonnaise, Merveille de Lyon, Ethel Brownlow, W. A. Richardson, and Marie Van Houtte. Among the new varieties were noted Milton, Tynnyson, a rich flesh-coloured variety of good form; Exquisite, Aurora, and Waltham Standard. With a little more furnishing, this would have been much more effective (Silver-gilt Flora Medal).

Messrs. JAS. BACKHOUSE & SON, Ltd., of York, had a charming arrangement of Alpine plants on a miniature rockery, which at once attracted the eye, the tiny gems being so naturally placed as to quite make one imagine they had actually grown on the rockery. Included in the collection were good examples of the Poppy-like flowered *Romneya Coulteri*, a charming Californian plant. The same firm also staged a group of stove and greenhouse plants and Orchids, including good *Cattleya Mossiae* Mendeli, *Odontoglossum crispum*, *Todea superba*, *Ixoras*, *Gleichenias*, also a very charming *Begonia*, with brilliant scarlet flowers, named *Phosphorescens*; and a new *Croton*, *Lady Deramore*. On the front were arranged same tubs of *Nymphaeas* which, although not open in flower, still showed the style of cultivation (Silver-gilt Flora Medal).

Messrs. LITTLE & BALLANTYNE, Carlisle, staged a nice group of stove and greenhouse plants, including purple-leaved Vines, and *Acalypha Sanderiana*. Messrs. Little & Ballantyne received a First-class Certificate for Holly, Golden King.

Mr. JOHN FORBES, of Hawick, had a magnificent collection of Phloxes, Pentstemons and Delphiniums, and all agreed that they were remarkably fine, and the Royal Horticultural Society awarded to this exhibit a Silver Flora Medal.

Messrs. WALLACE & Co., Colchester, exhibited a very representative collection of Lilliums and Calochortus, also the charming *Hemerocallis aurantiaca* major, *Lilium Thunbergi* Horsmanni, dark purple; and *L. Thunbergi* var. *Alice Wilson*, a pleasing yellow (Silver Banksian Medal).

Mr. HUDSON, gr. to LEO, ROTHSCHILD, Esq., Gunnersbury, exhibited, not for competition, a charming lot of *Nymphaeas*, including *N. Mariacea rubra punctata*, *Chromatella Mariacea*, rosea, *Mariacea alba*, alba rosea, *Andreana*, odorata, rosea, all cut from the open air (Silver Banksian Medal).

Mr. JAS. DOUGLAS, Edenside, Bookham, had a nice collection of named Carnations, including Churchwarden, Nell Gwynne, Prime Minister, and Lady Grimston.

Messrs. COCKER & SONS, of Aberdeen, staged in vases a magnificent group of Spanish Iris of various colours at the end of the fruit department, and were awarded by the Royal Horticultural Society a Silver Flora Medal. In the other groups there was nothing noteworthy. The 1st prize went to Mr. McIntyre (Mrs. G. PEASE, Darlington), whose group, while being tastefully arranged, lacked quality. 2nd, R. O. LAMB, Esq. (gr., Mr. Farquharson), who had a nice group that was somewhat lacking in colour. 3rd, Mrs. JENNINGS, Haymarket Newcastle.

Fire place decoration.—In this class the 1st prize was taken by J. BATTENBY, Esq., Blagdon; 2nd, Mrs. B. JENNINGS.

Specimen plants were not extensively shown, the prizes being taken by the Marquis of ZETLAND, Mrs. JENNINGS, and J. B. CLAYTON, Esq.

CUT ROSES, &c.

made a grand display, the premier awards in every case going to Messrs. HARKNESS, of Bedale, which firm showed in excellent form in the class for seventy-two varieties. Messrs. Harkness showed good blooms of *La France*, Alfred Colomb, Jeannie Dickson, White Lady, Ulrich Brunner, Lady Mary Fitzwilliam, &c. The 2nd prize went to Messrs. L. & W. CROLL, Dundee, who had good *Innocente Pirola*, Jeannie Dickson, Mrs. R. S. Crawford, &c., and the 3rd to Messrs. G. & W. BURCH, Peterborough.

In forty-eight varieties, 1st, Messrs. HARKNESS & SON; 2nd, Messrs. R. MACK & SON.

In thirty-six varieties, 1st, Messrs. HARKNESS & SON; 2nd, Messrs. CROLL, all good exhibits.

Twelve Roses, one variety, 1st, Messrs. HARKNESS & SON, Bedale, who showed very fine blooms of Mrs. John Laing (Silver Banksian Medal); 2nd, Messrs. R. MACK & SON.

In the smaller classes the prizes were taken by W. HUTCHINSON, Esq., of Kirby Moorside, and R. PARK, Esq.

One of the most charming displays of the show were the tables of Roses arranged for effect. In this class the 1st prize was given to Messrs. PERKINS, of Coventry, who showed a charming arrangement; the 1st prize lot of Messrs. CROLL, of Dundee, was also most meritorious. All of these were very excellent.

In cut herbaceous blooms, a very charming display was presented, and Messrs. COCKER, of Aberdeen, certainly staged very fine exhibits, the general opinion being that they were the finest ever seen in the North.

Herbaceous Plants.—For twenty-four bunches, 1st, Messrs. COCKER & SON, showing good bunches of *Heuchera sanguinea*, *Helenium Bolanderi*, *Paeonia festiva*, *Iris Leander*, *I. Blue Emperor*, *Lilium Harrisii*, &c.; 2nd, Messrs. HARKNESS & SON, Bedale; 3rd, Mr. EDMONDSON, Newcastle.

Eighteen bunches, 1st, Messrs. COCKER & SON; 2nd, Messrs. HARKNESS & SON, who received for this a Bronze Flora Medal. All the other exhibits in these classes were very excellent.

Cut flowers formed very choice exhibits, and in bouquets and baskets of flowers the competition was very keen by Messrs. PERKINS & SON, of Coventry, Mr. EDMONDSON, of Newcastle, and Mrs. JENNINGS.

FRUIT.

For the premier collection of eight dishes the competition was keen, and five collections were staged. The 1st prize was awarded to Mr. J. H. Goodacre, gr. to the Earl of HARRINGTON, Elvaston Castle, Derby, the following being the kinds and varieties: Black Hamburg Grapes, Canon Hall Muscat, Lord Napier Nectarine, very fine; Countess Melon, Barrington Peach, brown Turkey Fig, red Australian Apple, and a Queen Pine-apple. Mr. McIndoe, gr. to Sir JOSEPH PEASE, Hutton Hall, Guisborough, was 2nd, his best dishes were Madresfield Court and Chassela, Napoleon Grapes; 3rd, Mr. J. Tullet, gr. to Lord BARNARD, Raby Castle, Staindrop.

In the four dishes of fruit competition, the premier position was taken by Mr. GOODACRE, the veteran exhibitor of Elvaston Castle gardens, with fruits very excellent in every point; the 2nd place falling to Mr. J. McINDOE; and the 3rd to Mr. G. Lonsdale, gr. to R. H. APPLETON, Esq., Woodside Hall.

The best four bunches of Grapes were shown by Mr. GOODACRE, who staged well-finished bunches of Madresfield Court and Muscat Hamburg; 2nd, Mr. McINDOE, with nice bunches of Chassela Napoleon, Muscat of Alexandria, and Madresfield Court; 3rd, Mr. TULLET.

The best two bunches of Grapes, viz., Muscat of Alexandria, were shown by Mr. R. Strickland, gr. to T. W. BACKHOUSE, Esq., West Haddon House, Sunderland, whose Frontignans were well finished; 2nd, Mr. McINDOE, gr. Hutton Hall, with Muscat of Alexandria.

The best two bunches of Black Hamburg Grapes were those shown by Mr. GOODACRE; nd, Mr. LONSDALE.

For the best two bunches of any other kind of Grape, the prizes went to Mr. McINDOE, 1st, with well-finished Madresfield Court; and to Mr. GOODACRE, 2nd.

VEGETABLES.

Special prizes were offered for collections of vegetables, nine distinct kinds, by Messrs. SUTTON & SONS, Reading, the prize being taken by Mr. J. McINDOE, of Hutton Hall, to whom the 1st prize of Messrs. WEBB & SONS, Stourbridge, was awarded for a collection of six kinds. These were the only collections shown.

The Deputation from the Royal Horticultural Society consisted of Sir Trevor Lawrence, Bart, the President of the Society; the Rev. W. Wilks, Secretary; Philip Crowley, Esq., Treasurer, and Messrs. C. E. Shea, T. Statter, A. H. Pearson, J. Wright, G. Yeld, A. Turner, and J. O'Brien.

Most of the members left Kings Cross by the 2.20 p.m. train on Tuesday, arriving at Newcastle-on-Tyne in time for the dinner at the Central Station Hotel at 8.45. An excellent dinner was provided, and the deputation was heartily welcomed by the President of the Durham, Northumberland, and Newcastle Botanical and Horticultural Society, Riley Lord, Esq., J.P.; Alderman J. B. Ellis, J.P., Chairman; Benjamin Plummer, Esq., Vice-Chairman; Councillor John Armorer Baty, Treasurer; and J. J. Gillespie, jun., A.C.A., M.A., LL.D., Secretary; and among the other members of the Council present to welcome the deputation were:—Councillor John Beattie, Councillor J. J. Gillespie, Councillor Alfred Fox, and Messrs. J. T. Corking, J. Dick, J. D. Garland, G. Todd, J. B. Reid, T. G. Morpeth, and Councillor Alexander Hepburn. Sir Trevor Lawrence was unavoidably absent, having appointed to meet the deputation in the show ground in the morning.

After dinner, and the toast of Her Majesty the Queen had been duly honoured, Mr. Riley Lord, on behalf of the Society, in a very warm and kindly speech, welcomed the deputation. Mr. Riley Lord said they felt honoured by the visit, and he hoped and believed that the members of the deputation who had kindly come such a long distance to further the interests of horticulture would not be disappointed by what they would see on the morrow. Those who had undertaken the arrangements had worked hard, and he thought they had secured a show far in advance of anything which had been held in Newcastle before, and perhaps second to none outside of London. All they wanted was fine weather, which they had so often failed to get, that bad weather was associated in the minds of the Newcastle people with the show. He hoped on this occasion the weather would be fine, and that they would not have a recurrence of the calamity of 1891, when the tents were blown down, and the Society almost ruined. But they ought not to grieve over that calamity, for out of it came renewed energy, and with the aid of hard workers and liberal friends, the Society may be said to have been re-established on a better basis from that time. He proposed "the health of the Royal Horticultural Society, coupling with it the name of Mr. Philip Crowley."

Mr. CROWLEY said he was pleased to see displayed such interest in horticulture, and to get such evidence of the vigour and vitality of the Society they were deputed to visit, as was shown in the President's remarks relating to its troubles, and the ultimate victory over them. The Royal Horticultural Society had also had its ups and downs, and he mainly attributed its present position to the fact that it had consistently adhered to horticulture, and to the spread of the knowledge of it. Years ago the Society sent collectors abroad, to whose labours our gardens were indebted for many excellent plants; but in recent years nurserymen had taken up the work, and therefore there was now no need for the Society to continue such ventures. In proof of the vigour of the Royal Horticultural Society, he

should state that already this year they had the record number of new Fellows, and he had no doubt the work of the Society at its fortnightly meetings, the Great Temple Show, and the Crystal Palace Fruit Show under the auspices of the Society, were doing great good to Horticulture. He thanked the President for the kind reception given the deputation.

The toast of the health of the Secretary of the Royal Horticultural Society being given, the Rev. W. Wilks said that the deputation was one of Horticulture, and they were not orators. They did not come to make speeches, but to gauge the results of the efforts made on behalf of Horticulture at Newcastle-on-Tyne. Sir Trevor Lawrence would address them to-morrow, and therefore he would not occupy their time. He proposed the health of the Durham, Northumberland, and Newcastle Horticultural Society, coupling with it the name of Alderman Ellis, the Chairman of the Society. Alderman Ellis said he was sure the Council appreciated the honour of the visit from the Royal Horticultural Society, and he praised in high terms the different members of the Council who had worked so hard to bring about the present fine show, which he hoped, with the aid of fine weather, would be a great success in every way.

The toasts of Mr. Gillespie, the Secretary, that of Mr. J. A. Buty, Treasurer, and of Mr. Benjamin Plummer, Vice-Chairman, having been duly honoured, the party broke up shortly after 11 P.M.

The following is a list of the Awards made by the Deputation, and the names of the recipients.

GOLD MEDAL.

To Messrs. Jas. Voitch & Sons, Chelsea, London, for a grand group of rare plants, Orchids, &c.

SILVER-GILT FLORA MEDAL.

To Messrs. Wm. Paul & Sons, Waltham Cross, for an extensive collection of cut Roses.

To Messrs. Jas. Backhouse & Son, York, for a pretty group of Alpines, and a collection of miscellaneous plants.

To Mr. John Forbes, Hawick, Scotland, for a grand display of Pentstemons, Phloxes, and Delphiniums.

SILVER-GILT BANKSIAN MEDAL.

To Messrs. Wallace & Co., Colchester, for a fine collection of Lilies, Calochorti, &c.

SILVER FLORA MEDALS.

To Messrs. Perkins & Son, Coventry for a pretty group of Roses with foliage.

To Messrs. H. Cannell & Sons, Swanley, for a very fine group of Cannas.

To Mr. John McIntyre (gr. to Mrs. Gurney Pease), for a fine group arranged for effect.

To Messrs. J. Cocker & Sons, Aberdeen, for grand group of Spanish and English Iris.

To J. Cocker & Son, Aberdeen, for herbaceous plants.

SILVER BANKSIAN MEDALS.

To Mr. S. Pye, Bowgrave Nursery, Garstang, for a fine lot of Violas and Pansies.

To Messrs. Harkness & Son, Bedal, for a fine stand of Rose Mrs. John Laing.

To Leopold de Rothschild, Esq. (gr. to Mr. J. Hudson), for Water Lilies.

To Mr. A. Lister, Pothesay, for Violas.

To Sir James Pease, M.P. (gr. to Mr. McIndoe), for a fine stand of fruit.

BRONZE FLORA MEDAL.

To Messrs. Harkness & Sons, for herbaceous plants.

FIRST-CLASS CERTIFICATE.

To Holly Golden King, from Messrs. Little & Ballantyne.

WOBURN EXPERIMENTAL FRUIT-FARM.—At the invitation of the Duke of Bedford and Mr. SPENCER PICKERING, F.R.S., the Director, a party of horticulturists visited the experimental farm at Ridgmont on Wednesday last. Mr. PICKERING explained the objects of the experiments as formerly detailed in these columns. The fruit-trees have grown well since we saw them some two years ago. Strawberry-picking was proceeding vigorously, and of the kinds grown the Countess was pronounced the best. The object-lessons furnished by some of the experiments were very striking, particularly those showing the difference between growing fruit-trees with or without grass, the advantage being manifestly with those where the soil was free from grass. Cox's Orange Apple had done remarkably well, but many of the Plums were blighted. Superlative Raspberry justified its name. For the most part the ground is closely cropped with small trees with bush-fruit beneath. Hitherto the use of manures, whether natural or artificial, has proved of little or no advantage, but time will show how long this condition of affairs will last. One very beautiful feature consisted in the very long rows of Sweet Williams for cutting. Mr. CASTLE, the manager, has a fine strain, and the

display was truly magnificent. In the afternoon the party visited the Park, and admired the noble trees, and the herds of deer from all parts of the world. They were also conducted through the exceedingly interesting picture galleries, the sculpture hall, the grotto, and the Chinese dairy. The bedding-out is good of its kind, but the elaborate patterns and coloured sands looked out of place by the side of the mansion. A rocky border, on the other hand, was generally admired. In an experimental garden like this we must wait for some years for trustworthy results.

THE ROSARY.

NEW ROSES.

Messrs. ALEXANDER DICKSON & SONS, of Newtownards, co. Down, send us coloured illustrations of their new Roses:—Killarney, H.T., with the colour of the old China Rose; Daisy, similar but of darker pink; Ard's Rover, H.P., regularly formed, rich crimson; Meta, T., with elongated slender buds and petals, with reddish streaks on a yellow ground; Beryl, a small-flowered yellow Rose, with recurved petals of great beauty.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.			BRIGHT SUN.	
	Above (+) or below (−) the Mean for the week ending July 9.	ACCUMULATED.				(More +) or less (−) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Dura- tion for the Week.	Percentage of possible Dura- tion since Jan. 2, 1898.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 2, 1898.	Below 42°, difference from Mean since January 2, 1898.					
		Day- deg.	Day- deg.	Day- deg.	Day- deg.	10ths Inch.	Ins.			
0	2 —	77	0	+ 120	— 228	0	aver 138	29.5	28	23
1	1 —	53	0	+ 80	— 222	2 —	105	12.6	46	31
2	2 —	102	0	+ 113	— 216	4 —	97	10.1	42	30
3	2 —	109	0	+ 40	— 207	5 —	89	10.2	39	32
4	2 —	106	0	+ 14	— 215	5 —	87	9.1	45	32
5	1 —	124	0	+ 64	— 243	5 —	83	9.8	47	34
6	2 —	97	0	+ 117	— 217	4 —	120	19.5	46	34
7	2 —	106	0	+ 105	— 244	5 —	103	16.7	47	36
8	1 —	116	0	+ 84	— 156	6 —	95	14.9	76	41
9	1 —	96	0	+ 94	— 168	6 —	127	17.5	43	32
10	0	aver 113	0	+ 137	— 134	6 —	97	16.8	56	35
*	0	aver 127	0	+ 193	— 93	4 —	107	12.0	83	44

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending July 9, is furnished from the Meteorological Office:—

"The weather during this week was fine and dry in nearly all parts of the kingdom. In the extreme north and north-west, however, unsettled, rainy conditions prevailed during the earlier half of the period.

"The temperature was a little below the mean in all districts, but just equalled it in 'Ireland, S.' and the 'Channel Islands.' The highest of the maxima, which were registered either on the 6th or 7th, ranged from 79° in 'England, S.' and 78° in 'England, S.W.' to 78° in 'Scotland, W.' and 72°

in the 'Channel Islands.' At the end of the week the daily maxima were very low over the eastern parts of England. The lowest of the minima were recorded during the earlier days of the week, and ranged from 37° in 'Scotland, E.,' 'Ireland, N.,' and 'England, S.W.' to 44° in 'England, N.E.,' 'N.W.,' and 'S.' and to 49° in the 'Channel Islands.'

"The rainfall just equalled the normal amount in 'Scotland, N.,' but was less in all other districts. In most parts of England and Ireland the fall was extremely slight, and in several localities there was no rain at all.

"The bright sunshine exceeded the mean over the kingdom as a whole, especially in 'England, S.W.' and the 'Channel Islands,' but only just equalled it in 'Scotland, N.' and 'England, E.' The percentage of the possible duration ranged from 83 in the 'Channel Islands,' 76 in 'England, S.W.,' and 56 in 'Ireland, S.' to 47 in 'England, S. and N.W.,' 39 in 'England, E.,' and to 28 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, JULY 14.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apricots, per box...	1 3-2 3	Gooseberries, per sieve...	1 6-1 9
— baskets...	2 6-3 0	— ripe yellow, per sieve...	2 6-3 0
Bananas, bunch...	8 0-10 6	— red, per sieve...	2 6-3 0
Cherries, English, May Duke, per sieve...	6 0-9 0	Melons, each...	1 0-2 0
— white...	4 0-6 6	Nectarines, doz...	6 0-12 0
— black...	3 0-5 6	— second quality...	2 0 6 0
— Florence...	6 0-10 0	Peaches, per doz. (according to size)...	8 0-15 0
Currants, black, per sieve...	5 0-8 0	— Second quality...	2 0-6 0
— red...	4 0-6 0	— foreign, in box of 12...	1 0 —
Figs, per dozen...	1 0-2 0	Pines, each, from...	1 8-6 0
Grapes, English, Hamburgh, per lb...	1 0 2 0	Raspberries, dozen punnets...	4 0-5 0
— Belgian, per lb...	0 7-0 9	— tubs, cwt...	80 0-35 0
— Channel Isles, per lb...	1 0 —	Strawberries, Southampton, baskets...	0 9-1 0
— Muscats, per lb...	1 3-2 0	— Kent, pecks...	2 6-3 6
Greengages, foreign, baskets...	3 6-4 6	— gallons...	1 0 —
		— punnets, dozen...	3 0-6 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz...	0 9-1 6	Onions, Valencia & Oporto, cases...	5 6 —
Beans, English (Dwarf), lb...	0 6-0 8	Parsley, per dozen bunches...	4 0 —
— Channel Islands, per lb...	0 6 —	Peas, Eng., white, per bushel...	1 0 —
— sieves...	4 6-5 0	— blue, bushel...	1 6-2 0
— French, flats...	6 0 —	— blue, bushel...	1 6-2 0
— Broad, bushel...	1 0-1 6	— blue, bushel...	1 6-2 0
Beetroots, per doz...	1 0 —	— blue, bushel...	1 6-2 0
— p. tally of 60...	4 0-5 0	— blue, bushel...	1 6-2 0
Cabbage, open, doz...	0 6 —	— blue, bushel...	1 6-2 0
— open, p. tally...	1 0-2 0	— blue, bushel...	1 6-2 0
Cauliflowers, English, per dozen...	2 0-3 0	— blue, bushel...	1 6-2 0
Cress, doz. punnets...	1 6 —	— blue, bushel...	1 6-2 0
Carrots, New, bunches, per dozen...	0 8-1 3	— blue, bushel...	1 6-2 0
Celery, new, per bundle...	1 0-1 3	— blue, bushel...	1 6-2 0
Cucumbers, p. doz...	2 0-3 0	— blue, bushel...	1 6-2 0
Endive, new, per dozen...	1 6-2 0	— blue, bushel...	1 6-2 0
Garlic, new, per lb...	0 4 —	— blue, bushel...	1 6-2 0
Horseradish, foreign per bundle...	0 9-1 0	— blue, bushel...	1 6-2 0
Leeks, new, dozen bunches...	2 0 —	— blue, bushel...	1 6-2 0
Lettuce, Cabbage, home-grown, per doz...	0 9-1 0	— blue, bushel...	1 6-2 0
— Paris Cos, home-grown, per score...	1 3-1 6	— blue, bushel...	1 6-2 0
Marrows, Vegetable, per dozen...	4 0-6 0	— blue, bushel...	1 6-2 0
Mint, per dozen bunches...	2 0-3 0	— blue, bushel...	1 6-2 0
Mushrooms, per lb...	0 6-1 0	— blue, bushel...	1 6-2 0
Onions, Egyptian, bags...	5 6 —	— blue, bushel...	1 6-2 0
— Green, per doz. bun...	2 0-4 0	— blue, bushel...	1 6-2 0

REMARKS.—Large supplies all round, and prices generally low. The Gooseberries are now changing colour—note the yellow and red above quoted. Raspberries are now coming along fast. The Cherries are coming in very good condition. The bulk of Strawberries are the Royal Sovereign and Paxtons. Pea trade is very slow, and the Broad Windsor Bean is at its best. The Bedford Potatoes look healthy. Note the price of Carrots; they are now good eating.

POTATOS.

Home grown, Myatts, 120s. to 160s.; others, 80s. to 100s. per ton. John Bath, 92 and 94, Wellington Street, Covent Garden.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms	3 0-4 0	Orchids:—	
Carnations, pr. doz.	1 0-3 0	Cattleya, 12 bms.	6 0-9 0
... ..	2 0-4 0	Odontoglossum	
Eucharis, per dozen	1 6-3 0	crispum, 12 bm.	2 0-4 0
Gardenias, per doz.	0 8-1 0	Pelargoniums, scar-	
blooms	0 3-1 0	let, per 12 bun.	3 0-5 0
Gladioli, white, doz.	0 3-1 0	— per 12 sprays ...	0 4-0 6
sprays	0 3-1 0	Roses, Tea, per doz.	0 6-1 0
Lilium Harris, per		— yellow (Pearls),	
dozen blooms ...	3 0-4 0	p. r dozen ...	1 0-2 0
Lily of the Valley,		— pink, per dozen	2 0-4 0
dozen sprays ...	0 6-1 0	— Safrano, p. doz.	1 0-2 0
Maidenhair Fern,		— red, per dozen	1 0-1 6
per 12 bunches ...	4 0 8 0	Stephanotis, doz.	
Mignonette, per 12		sprays ...	1 0-1 6
bunches	2 0-4 0	Tuberose, 12 blms.	1 0-1 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	4 0-12 0	Fuchsias, per doz.	6 0-9 0
Aspidistras, p. doz.	12 0-30 0	Foliage plants, per	
— specimen, each	5 0-15 0	dozen	12 0-36 0
Calceolaria, per doz.	6 0-9 0	Heliotropes, p. doz.	5 0-7 0
Coleus, per doz. ...	4 0-6 0	Hydrangea various	
Crassula, per doz. ...	12 0-24 0	per doz.	10 0-18 0
Dracanas, each ...	1 0-7 6	Liliums, various,	
— various, p. doz.	12 0-24 0	per dozen	12 0-30 0
Ericas, various, per		Marguerites, p. doz.	6 0-12 0
dozen	12 0 30 0	Mignonette, p. doz.	4 0-6 0
Evergreen shrubs,		Palms, various, ea.	2 0-10 0
in variety, p. doz.	6 0-24 0	— specimens, ea.	10 6-84 0
Ferns, small, per		Pelargoniums, doz.	12 0-18 0
dozen	1 0-2 0	Rhodanth, per doz.	4 0-6 0
— various, p. doz.	5 0-12 0	Scarlets, per doz.	3 0-6 0
Ficus elastica, each	1 0-7 6	Spiræa, per dozen	6 0-9 0

FRUIT AND VEGETABLES.

GLASGOW: July 13.—The following are the averages of the prices at this market during the past week:—Apples, Canadian Spy, 24s. to 26s. per barrel; ditto, Russets, 24s. ditto; ditto, Western States (Winesops), 20s. to 22s. do.; ditto, Russets, 18s. ditto; Tomatos, Guernsey, 6d. to 7d. per lb.; Grapes, home, 3s. 6d. to 4s. 6d. per lb.; ditto, foreign, 6d. to 1s. ditto; Gooseberries, 3s. 6d. to 4s. per stone; spring Cabbages, 7d. to 10d. per dozen; Cauliflowers, Dublin, 2s. 6d. do.; Herbs, 1d. to 2d. per bunch; Mint, green, 6d. to 9d. do.; Onions, 5s. 6d. per cwt.; do., Portugal, 14s. to 15s. per case; Parsley, 2s. per stone; Potatos, 1s. do. (best); Carrots, 8s. to 10s. per cwt.; Peas, 4d. to 5d. per lb.; Cucumbers, 3d. to 6d. each; Lettuces, round, 6d. to 9d. per dozen; do., Cos, 6d. to 1s. do.; Radishes, 9d. to 1s. 6d. per dozen bunches; Horse-radish, 1s. 6d. per bundle; Mushrooms, 1s. to 1s. 2d. per lb.; Beet-roots, 7d. to 8d. per dozen; Spinach, 1s. 6d. to 2s. per stone; Rhubarb, 2s. 6d. to 3s. per cwt.; Turnips, white, 7d. to 9d. per large bunch; Broccoli, 1s. 6d. to 2s. per dozen; Greens, 2s. per ten dozen; Asparagus, 1s. 6d. to 2s. p bunch; Sytoes, 6d. per bunch.

LIVERPOOL: July 13.—Average of the prices at undernoted markets:—St. John's: Potatos, 1s. 4d. to 1s. 8d. per pec; Peas, 1s. 2d. to 1s. 4d. do.; Asparagus, 2s. 6d. to 3s. per 100; Cucumbers, 4d. to 6d. each; Strawberries, English, 6d. to 8d. per qt.; Gooseberries, 3d. per lb.; Cherries, 4d. to 6d. do.; Apricots, 1s. per dozen; Currants, 6d. per lb.; do., red, 6d. do.; Grapes, home, 2s. 6d. to 3s. 4d. do.; Pines, 5s. each; Mushrooms, 1s. 4d. per lb. Birkenhead: Potatos, 1s. 4d. to 1s. 6d. per peck; Peas, 10d. to 1s. 4d. do.; Cucumbers, 2d. to 4d. each; Apricots, 9d. to 1s. per dozen; Gooseberries, 1½d. to 3d. per lb.; Cherries 6d. to 8d. do.; Strawberries, 4d. to 8d. do.; Currants, red, 6d. do.; do., black, 6d. to 8d. do.; Grapes, English, 2s. to 3s. 6d. do.; Mushrooms, 6d. to 8d. do. North Hay: Potatos, Early Regents, 4s. to 5s. per cwt.; do., new, per 21 lb., 1s. 3d. to 1s. 6d.; Kidneys, 5s. to 6s. per cwt.; Turnips, 6d. to 8d. per dozen bunches; Carrots, 6d. to 8d. do.; Onions, foreign, 6s. to 6s. 6d. per cwt.; Parsley, 4d. to 5d. per dozen bunches; Lettuces, 6d. to 8d. per dozen; Cucumbers, 1s. to 2s. do.; Cauliflowers, 1s. 9d. to 2s. 6d. do.; Cabbage, 4d. to 10d. do. Peas, 2s. 4d. to 2s. 6d. per bushel.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending July 9, and for the corresponding period of 1897, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1897.	1898.	Difference.
	s. d.	s. d.	s. d.
Wheat	27 4	36 10	+ 9 6
Barley	17 4	25 0	+ 7 8
Oats	18 8	20 5	+ 1 9

SEEDS.

LONDON: July 13.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write, that as was expected, to-day's seed-market was thinly attended, and presented no feature either of interest or novelty. Some of the samples which come to hand of the new French Trifolium show disappointing quality. Occasional small sowing orders drop in for Mustard and Rapeseed. As regards Clover-seed there is no business passing, whilst for

Birdseeds the sale is also meagre. Blue Peas and Haricot Beans move off slowly on former terms; Buckwheat is dearer. The Board of Trade returns gives the imports of Clover and Grass-seeds into the United Kingdom for the first six months of this year as 219,869 cwt., value £424,235, as against 178,298 cwt., value £361,594, for the corresponding period of 1897.

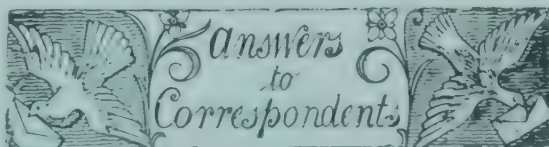
CATALOGUES RECEIVED.

HERD BROS., Penrith—Bulbs.
J. M. THORBURN & Co., New York, U.S.A.—Preliminary Trade List of American Tree and Shrub Seeds, &c.
THE TOKIO NURSERIES Co., Japan—Japanese Bulbs, &c.
ROVELLI FRÈRES, Pallanza, Italy—Seeds of Conifer and Hardy Trees, &c.
FRED. C. SMITH, Yalumba, Angaston, S. Australia—Seeds, &c.

ENQUIRY.

"He that questioneth much shall learn much.—BACON."

CAN any reader give me any information as to the plant to which the term "Lily of Jorow" is applied? The plant is described as being a native of the back woods of America, and as having a flower of a blue colour, and highly scented. *Tt.*



A SITUATION ON A TEA OR COFFEE-GROWING ESTATE: *Scotchman.* We do not know a better way of obtaining the situation you require than to advertise in the *Times*, *Times of India*, *Ceylon Advertiser* (published in Colombo), or the *Planter's Gazette*, published at 32, Fenchurch Street.

A SWEET BRIAR MAZE: *A. R.* It would be advisable to employ stakes, say, of half-inch round bar iron. If the plants are closely cut-in annually, as they must be, an almost impenetrable hedge will grow up. Longitudinal wires might be stretched from stake to stake, to which the growths might be fastened.

BEGONIA GLOIRE DE LORRAINE WITH YELLOW LEAVES: *Anxious.* It may be rust due to a fungus. Kindly forward a few leaves for inspection.

CANTERBURY BELL: *Bertram Jones.*—The kind of Hose-in-Hose flower, erroneously called a "double"-flowered variety, is now become in a great measure constant, and seeds from trustworthy sources can be guaranteed to produce a very large percentage of plants bearing flowers of this description.

CARNATION: *H. & S.* Your Carnation is most beautiful. We do not remember to have seen one so clear and bright a rose colour. The petals are large, and good form also, but being not too numerous, the calyx does not split.

CORRECTION—BATH SHOW. The medal for the best Tea Rose in the Amateur's Classes was won by Mr. A. Hill Gray with Maman Cochet, and not with Hybrid Tea Caroline Testout, as was unfortunately stated in our report of the same.

FIGS: *E. S. G.* The affected fruits are the result of check from some means. Probably there has been insufficient care exercised in the matter of ventilation during the cold winds a fortnight ago. All you can do is to prevent any check occurring to the trees.

FRUIT TREES ON A WALL: *E. M. C.* The shoots are infested with aphids, that can be annihilated by spraying with kerosene emulsion, or with tobacco-water, or Quassia-water, in which a little soft-soap is dissolved. Probably several applications at short intervals will be necessary.

FRUIT-TREE PLANTING, &c.: *Hortus.*—The quincunx method is the best, letting the trees stand at an equal distance apart. Garden crops and bush fruit should be planted in lines running north by south.

GARDEN: *H. K. G.* A piece of land, partly shaded by big trees, and only measuring 63 square rods, would not supply an establishment of twelve persons throughout the year with vegetables and salads, although it might, if continuously cropped, afford what was wanted exclusive of Peas, Potatos, and Asparagus.

GRAPES ON A RECENTLY-REMOVED VINE: *Regular.* Most of the bunches should be removed, as to retain them would have a detrimental effect upon the Vine.

INSECT FEEDING ON APHIS: *J. S. & Sons.* The larvæ of the Ladybird—*Coccinella ocellata*.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*J. M. D.* *Spiræa prunifolia* fl. pleno, and *S. hypericifolia*, small leaves.—*J. Wood, Kirkstall.* *Ageratum conyzoides*, apparently artificially scented with "Cherry blossom."—*N. E. B.*—*P. F.* Probably an *Alpinia* or *Hedychium*, send when in flower; 2, *Arundinaria* (*Bambusa*) *Simoni aurea*; 3, *Colutea arborescens*.—*R. N. H.* The spotted flower is a form of *Odontoglossum Andersonianum*; the brown, *Oncidium prætextum*. Both are good varieties. — *W. T. B.* 1, *Pteris Adiantoides*; 2, *Lastrea filix-mas* var.; 3, *Lygodium japonicum* (scandens); 4, *Selaginella Wildevonii*; 5, *Asplenium viviparum*; 6, *Inula glandulosa*; 7, *Hemerocallis flava*.—*Young Gardener.* 1, *Adiantum concinnum latum*; 2, *Woodwardia radicans*; 5, *Magnolia Lenne*; 6, *Polemonium coruleum*, white form; 7, *Valeriana officinalis*. We cannot name the garden varieties of *Begonia*.—*W. T.* *Hyoscyamus niger* (common Henbane, and decidedly poisonous).—*A.* *Ophrys apifera*.—*W. T.* To name your Roses it is necessary they should be compared with a true collection. Send them to some Rose nurseryman.—*L. P.* *Prunella vulgaris*; 1, *Aira caryophylla*; 2, *Agrostis alba*; 3, *Bromus sterilis*; 4, *Holcus lanatus*; 5, *Avena flavescens*; 6, *Poa nemoralis*; 7, *Arrhenatherum avenaceum*.—*J. E. C.* *Pyrus Aria*, white Beam; *Campanula persicifolia*; *Campanula latifolia*.—*G. B.* *Belladonna Lily*, *Amaryllis Belladonna*.—*Samuel Ray.* *Alonsoa incisa*, so far as we can tell from a shrivelled scrap.—*C. A. B.* 1, *Inula helenium*; 2, *Centaurea montana*; 3, *Coreopsis latifolia*; 4, *Orchis maculata*; 5, *Lythrum salicaria*.

PEAR LEAVES WITH ORANGE-COLOURED SPOTS: *W. R. G.* The rust fungus, *Stigmataea Mespili*. The remedy recommended for other minute species of fungi, viz., sulphide of potassium or the Bordeaux Mixture, often mentioned in recent issues of the *Gardeners' Chronicle*, may be used. If nothing be done, the spots will coalesce, and the leaves turn brown and fall off. All the fallen leaves should be collected and burned.

PURPLE BEECH: *In Doubt.* The leaves are infested with chermes, and we fear there is no method known by which a large tree can be cleared of the lice, unless you could wash it with a fire-engine, using tobacco-water mixed with strong soap-suds. The ants you notice come for the honey-dew, the exudations of the chermes. Left alone, the mites may kill the tree.

REMOVAL OF TREES, SHRUBS, AND SALEABLE PLANTS BY NURSERYMEN, &c.: *G. B.* No new Act of Parliament. The trader is allowed to remove all saleable stock, but anything larger than this can be claimed by the landlord if no agreement exists to the contrary. He is also allowed a reasonable period of time in which to shift the plants, which is decided by the trade custom of the locality.

SEEDS AND PLANTS AT ROYAL GARDENS, KEW: *Amateur.* We are unable to answer your enquiries. The species of Lilies named in your note are suitable for the greenhouse or the open air.

TWELVE VARIETIES OF PEARS SUITABLE FOR THE NORTH: *W. H. B.* *Jargonelle*, *Beurré d'Amanlis*, *Louise Bonne de Jersey*, *Doyenné du Comice*, *Marie Louise*, *Beurré Bosc*, *Beurré d'Aremberg*, *Winter Nelis*, *Easter Beurré*, *Glout Morcéaux*, *Doyenné d'Ete*, *Williams' Bon Chrétien*, and *Swan's Egg*.

COMMUNICATIONS RECEIVED: *G. H. R.*—*H. H. D.*—*T. B.*—*W. H. W.*—*J. L.*—*E. G. H.*—*W. B.*—*Hans R. W.*—*J. A.*—*W. B. Crump*.—*F. W. B.*—*G. Woodward*.—*H. C.*—*B. C.*, South Shields. — *B. S. H.*—*C. W.*—*W. S.*, Exmouth. — *W. L.*—*E. Stewart*.—*A. J. L.*

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE Gardeners' Chronicle.

SATURDAY, JULY 23, 1898.

QUAINT CONCEITS IN OLD HERBALS.

HAVING had occasion to study old herbals in connection with transcriptions from MSS. of medical works of the fourteenth Century, about to be published, I thought a few odd descriptions, &c., might interest readers of the *Gardeners' Chronicle*. I have, e.g., an Italian herbal by Castore Durante, 1636 A.D., published just thirty-nine years after Gerarde's, in 1597. Each plant has its peculiarities recorded in Latin hexameters, but the "form," "place," "quality," &c., are in Italian. The plants are arranged alphabetically, each having a curious little woodcut adjoined. The following are a few taken as examples:—

AMONIMUS.—This appears to be *Oxalis sensitiva*. A hand is represented as grasping a leaf, which has crumpled itself up. "Wonderful is the nature of this plant; if touched by the hand, the leaf, which is like the Polypody, immediately withdraws itself. It comes from Malavar."

ARBOR TRISTIS.—"There was a nymph who loved the sun, but complained that he preferred another; overcome with chagrin, she adopted the form of a tree, which flowered only at night, so that the sun should never see the blossoms. The flower is yellow, and a water distilled from it is good for the eyes." The illustration is that of a Stinging-nettle, the main trunk issues out of the nape of the nymph's neck, while her arms form two side, leafy branches. Her legs form a sort of divided trunk, the feet having turned into roots. The moon and stars are above in a cloudy sky.

BAARAS.—In Daubeny's *Roman Husbandry* there is a reproduction of a drawing of the Mandrake, attached to the Vienna MS. of Dioscorides' writings, of the fifth century. In it the Goddess of Discovery is telling him how this plant is to be got. She is offering him one, having a crown of foliage above, with a human body below; with her left hand she points to a dog with a twisted tail, writhing on the ground in the last agony of death. Josephus tells us how the Mandrake was extracted; and our present author supplies a drawing of the actual process. He first describes the "Baaras" as "having leaves like flames, which shine in the evening like a brilliant star. The root cannot be extracted by mere strength, for it retires into the ground if any one tries to pull it up." To obtain it, the plant must first be dosed with what must not be written for eyes polite. You must tie the tail of your dog to the crown. "The faithful animal, who will follow his master through fire and swords, rushes after him, and so drags the plant out of the ground; but alas! he breathes his last; however, he has saved his master from every danger, for whoever is vexed with a demon and cannot be

healed by human skill, let the root be placed upon him, and the demon will go."

The author adds:—"Some impostors have falsely attributed all these things to the Mandrake, by whom the whole world is deceived." But if Baaras be not the Mandrake, what was it? The Mandrake itself is elsewhere described, but nothing peculiar is said about it.

LUNARIA MINOR.—This appears to be *Hippocrepis*, or some other leguminous herb, with horseshoe-like divisions to the pod. Perspective is not regarded in these illustrations, for a horse in the foreground is prancing about, having cast two fore-shoes; but the herb is drawn just four times its height! The peculiarity of this little herb was, that it made horses shed their shoes.

JOB'S TEARS.—"A wonderful plant, which sheds tears, and supplies us with chaplets (i.e., rosaries) for praying with. Hence it is certain that the Powers can be invoked by our vows and prayers, accompanied with these tears!"

SILICUASTRUM.—"This has the name of Judas, and also the name of Love. No part of the tree is used in medicine." The illustration gives a stump (for brevity) bearing one bough, with leaves and pods; and another bough, cut short, having Judas himself suspended thereon.

SMILACE.—"The Yew has deadly poison. It will become harmless if a brass-nail be driven into its trunk; otherwise, it will kill anyone who dares sleep under its shade. It kills mice and oxen with its vapour. If you should eat out of vessels made of it, you will run terrible risks. It chills the whole body, and chokes those drinking, although it is a 'hot' plant." The drawing shows a man with a sword and a matchlock gun, recumbent beneath, but whether he is alive or dead is not apparent.

In an appendix of nineteen pages, each having six illustrations, with names only, there occurs, "The tree with the walking leaves." This is a tree with large boughs, covered with oval crenated leaves, having what look like insects' legs at the crenatures, two on each side, i.e., in four places. One leaf is falling from the tree. It is evidently *Bryophyllum calycinum*, and what the writer supposed to be legs are tufts of roots where it has struck in the ground; not knowing what to make of it, his fancy has depicted it as a tree with every leaf rooting. Another illustration is that of the Barnacle Goose tree, not unlike Gerarde's well-known figure. It is an interesting fact that illustrations of this are found in ancient Crete, showing transitions from the typical barnacle birds, the intermediary ones having wings coming out of the back, such corresponding to the branches of the barnacle. M. Costantin has figured this in his late work, *Les Végétaux et les Milieux Cosmiques*, p. 280. It shows the extreme antiquity of this curious delusion.

Going back to the fourteenth century, there was then a prevalent idea that worms corroded the teeth. The remedy was to put seed of Henbane and Leeks on a hot tilestone, and conduct the smoke through a pipe into the mouth, when the worms would fall out. Gerarde, writing 250 years afterwards, says:—"Mountibancke tooth drawers runne about the countrey, for to cause woormes to come forth of men's teeth by burning it (seed of henbane), in a chafing dish with coles . . . but some craftie companions to gaine money, convey small lute strings into the water, perswading the patient that they came out of his mouth." The curious fact is that Chinese female itinerant dentists

extract worms at the present day; which, however, they have previously concealed under their long nails. Their fee depends upon the number of worms extracted!

One more remedy, in the fourteenth century. For easy parturition:—"Say 'Quicunque vult' (i.e., the Athanasian Creed) three times, and all the Psalms over her, and"—all will go well! *George Henslow.*

ORCHID NOTES AND GLEANINGS.

METHOD OF CULTIVATING ORCHIDS.

THE *Chronique Orchidienne* for February, compiled by M. Cogniaux for his *Dictionnaire Iconographique*, contains a paper by M. Otto Ballif upon growing epiphytic Orchids in leaf-mould, as practised so successfully by M. de Langhe-Vervaeke of Brussels. Plants so cultivated flourish so exuberantly that a few details as to their treatment will, it is thought, prove acceptable, as, hitherto, certain Brazilian species of *Oncidium*, for instance, have gradually degenerated when grown in ordinary soil for three or four years.

Those who desire to try the experiment should select newly-imported Orchids, which can be immediately repotted in this leaf-mould. A single and large "crock" is sufficient in the bottom of the pot; the plant is set on a little mound, but the earth must not be too much heaped up—on the surface all that is necessary is a light layer of chopped live sphagnum. This sphagnum, which must be kept alive on the surface of the pots, serves to indicate the moist or dry state of the compost, and to prevent the entrance to the soil of other mosses or fungi which spoil the appearance of plants and prevents the air from easily penetrating to the roots in the middle of the pots. The earth used in repotting these Orchids should not be sifted, it should be quite *consommé à point*, that is to say, it should contain no newly-fallen or insufficiently rotted leaves.

The following is the composition of the soil in which M. De Langhe-Vervaeke repots Orchids submitted to this mode of treatment. It consists of about 30 per cent. of Oak-leaves, 15 per cent. of Hornbeam-leaves, 15 per cent. of Alder-leaves, 15 per cent. of Ash-leaves, 15 per cent. of Beech-leaves, and 10 per cent. of coarse white sand.

There can be no question of any exact formula for this or that genus of Orchids, for the good reason that it is not purposed to deal with one special genus, but with a collection of various sorts, the needs of which may not be precisely the same as regards nutrition.

The principal care devoted to Orchids submitted to this mode of culture is to keep them in a position favourable to their growth, and to be very careful about watering. By the use of slight immersion sparingly employed over the plants, the growth of the sphagnum with which all the Orchids are covered is well maintained, thus the sandy leaf-mould which serves as compost is kept slightly damp only, for excessive moisture is in this case to be avoided, as it would have a deleterious influence on the health of the roots.

A NEW BRITISH ORCHIS.

About the end of June, a friend on a visit in the Highlands, sent me for identification an Orchis he found near Arisaig in Inverness-shire, which he recognised as resembling *Habenaria conopsea*, but differing from it, especially in the spur of the flower, which was much shorter; he also noticed that it was even more fragrant. As I did not know it, I forwarded it to my son, who is well up in the native flora. It was new to him, too, and he asked if more specimens could be obtained. With some difficulty, as the flowering was then over, two more were found. After comparison in the Kew herbarium, the Orchis is believed to be *Habenaria odoratissima* (Richard), a species native on mountains in France and Germany, but not before known as British. The spot where it was found is within half-a-mile of the sea, and probably not more than 100 feet above it. *C. Wolley Dod, Edge Hall, Malpas.*

THE ROSARY.

BRITISH ROSES OF RECENT ORIGIN.

Of the many fine Roses which have recently been raised by eminent British rosarians, one of the most interesting has come from Aberdeen. The Messrs. Cocker, who have already distinguished themselves as the raisers of Duchess of York and Duke and Duchess of Fife, have given us a new Rose of the greatest attractiveness, bearing the name of Mrs. James Cocker, which I have at present in full bloom in my garden, and which I think is likely to prove a very great acquisition. Its colour is a beautiful shade of pink, and the flower is exceedingly massive, and very full. It is, in my opinion, a more attractive variety, whether as regards form or complexion, than either Mabel Morrison or Mrs. John Laing, from which Roses its attributes have been derived. While making some other crosses it occurred to the Messrs. Cocker that to cross Mrs. John Laing with a white Rose might have the effect of retaining all the good qualities of that remarkable variety, and at the same time alter the colour, which is somewhat too lilacy to be very fascinating; in short, they had hoped to produce a white or very light Mrs. John Laing, consequently they crossed it on Mabel Morrison, the latter being the seed parent. The cross was successful; but there was only one single seed in the pod, and the new variety is the produce thereof. It is, in short, a Mrs. John Laing, with a colour akin to, but finer than that of Baroness Rothschild, the parent of Mabel Morrison. It is extremely probable that Mrs. James Cocker may yet produce, in virtue of its origin, a pure white variety—by sporting. It must have, for reasons already indicated, an inevitable tendency in this special direction, quite as strong, I should say, as that of its grandparent, the beautiful Baroness, from which we have at least three white derivatives, viz., White Baroness, Mabel Morrison, and Merveille de Lyons. The raisers of Mrs. James Cocker fully expect to have the pleasure of seeing it produce pure white flowers before it is very old; but whether or not those hopes are realised, they may, in the meantime, feel assured that they have produced a valuable variety, which, besides being an ornament to the garden, is likely to prove, by reason of its colour and absolutely perfect form, of service for exhibition.

Another fine Rose, belonging to a different class, is Mr. William Paul's Empress Alexandra of Russia, which also adorns my garden for the first time this summer, growing side by side, for the sake of contrast, with Enchantress, also an emanation from Waltham Cross. They are both vigorous growers, highly distinctive in their colouring, and very floriferous. Waltham Standard, which appears to resemble A. K. Williams in habit of growth, I hope to have in flower in a few days. W. Paul's Aurora, not yet introduced, I have had the privilege of seeing at Waltham Cross, but not his Alexandra, which recently had the honour of receiving that name from His Royal Highness the Prince of Wales. That it will prove itself worthy of such a distinguished title I cannot doubt.

The Messrs. Cooling of Bath have of late years introduced some notable new varieties, of which Lawrence is probably the best; while several valuable Roses for garden decoration have come from Messrs. Paul & Sons, of Cheshunt, to whom, in various departments, we owe so much. The Messrs. Dickson, of the Royal Nurseries, Newtownards, have raised of late some remarkable Roses, among which may be mentioned Ulster, which gained last year at the Crystal Palace the Gold Medal of the National Rose Society; Countess of Caledon, a hybrid Tea of great fascination, the colour of which is carmine-rose; Tom Wood, Robert Duncan, and Ethel Richardson, the last-mentioned being flesh-white in complexion, with large flowers of finely-imblicated form; Muriel Grahame, supposed to be a sport from that highly prolific variety, Catherine Mermet, though raised elsewhere, was introduced by the great Newtownards firm—to whom, however, we are primarily indebted for many new Roses, to which, at least for garden cultivation,

I attach much more importance. The value of a Rose is not, after all, to be absolutely determined by its exhibition capabilities; for, as a general rule, floral productiveness and facility in flowering are by no means among the distinguishing characteristics of those which are remarkable for the dimensions of individual flowers. *David R. Williamson.*

ROSE KAISERIN AUGUSTA VICTORIA.

For freedom of flowering this perfect form of a beautiful hybrid Tea Rose has much to recommend it, and, moreover, it is a very useful market variety. It will soon rank as one of the best, as it is a flower that lasts a long time when cut from the plant, and bears carriage well. As illustrating its lasting qualities I need only mention that some fine blooms were shown by Mr. Spooner, of Arthur Bridge, at our local horticultural exhibition, held on the 13th and 14th inst., which were cut on the preceding evening, were in very good condition at the close of the show, that is, after they had been kept for two days in a hot tent. It is distinct from any other hybrid Tea in colour, being of a creamy-white, shaded with lemon-yellow. It is not a new variety, having been sent out in 1891 by Lambert and Reiter, but until this last year or two scarcely any flowers have been noticed in gardens or at exhibitions. *E. S., Woking.* [It has been observed in numerous stands this year. *Ed.*]

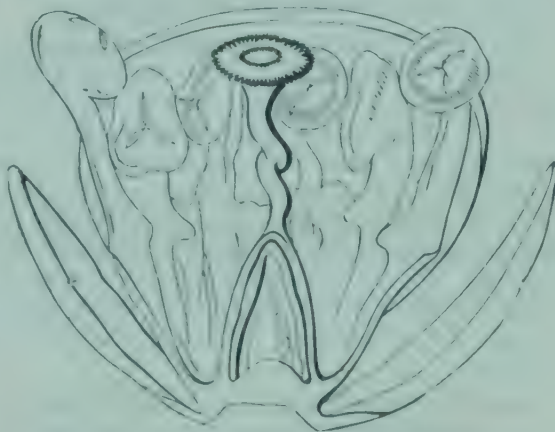


FIG. 15. SECTION OF A MAGNIFIED MALE FLOWER OF *WELWITSCHIA MIRABILIS*, AFTER HOOKER. (SEE P. 68.)

APOSPORY IN FERNS.

It has been suggested to me that it is desirable to maintain a current record of the phenomena observed in connection with apospory or the sexual (or it may be asexual) reproduction of Ferns, though the development of prothalli upon the fronds, instead of through the spore in the normal way. I venture to send a few notes bringing this record up to date so far as my and my co-workers' observations are concerned. The first instance, it may be remembered, was noted upon an abnormal form of Lady Fern (*Athyrium filix-femina* var. *clarissimum*, Jones), which after being reported barren for many years, though sori were apparently abundantly produced, was found capable of free reproduction if the fronds were layered, the apparent sori or spore heaps then developing prothalli in profusion, which in their turn produced typical plants in the usual sexual way. In this case the sporangia were found by Professor F. O. Bower to abort at an early stage, the stalk of the sporangium then producing a prothallus in lieu of spores. This form was subsequently named by the writer soral apospory, to distinguish it from a very different type, which Mr. G. B. Wollaston discovered upon one of our Soft Shield Ferns (*Polystichum angulare* var. *pulcherrima*, Padley). In this case it was not the sporangium, or anything connected with the spore, which produced the prothallus, but the extreme tips of the subdivisions of the frond itself elongated, and ran out into filamentous processes, which dilated into prothalli. This type the writer named apical apospory, and it will be noted as fundamentally different from soral apospory, appearing,

as it does, entirely apart from the normal reproductive site. One very important point in this differential connection, and which so far has not been particularly emphasised, is that while the plants resulting from the soral prothalli of *A. f. f. clarissimum* are perfect and fairly typical, those raised from the apical prothalli of the *Polystichum* are invariably extremely imperfect, being slender depauperate ragged growths entirely devoid of symmetry or any of the characteristic features of the parent Ferns. Subsequently, in *Polystichum* it was found that several other distinct finds of the same pulcherrimum type by Dr. Wills, Mr. Moly (two), and Mrs. Thompson produced prothalli in the same fashion; but the result in each case was precisely similar—batches of defective youngsters, and not a single typical plant, resulting. Further, although the parents are quite distinct, apart from the unusually long falcate subdivision of the pinnules which characterises the pulcherrima varieties, the offspring of all seem identical in their ragged character and lack of vigour. Hence, it seems clear in these several cases that the alienation from the site of the sorus, or proper reproductive points, handicaps the prothallus in its subsequent development of the Fern proper.

On the other hand, however, we have two other cases in which apical apospory is perfectly successful in yielding truly typical plants. *Lastrea pseudomas* apospora, as I have named it, is a very beautifully crested form of the hard male Fern, raised by Mr. Cropper. In this case, under close culture, all the apices develop prothalli freely, and if only one of these apices be pegged down under glass on sterilised soil, it will spread marchantia fashion to an unlimited extent, and produce a multitude of typical and perfect plants. These, moreover, are produced asexually, i.e., apogamously, and it is a moot question, and one worthy of further research, how far apogamy obtains in all these cases. The other case is that of one of the crispum Hart's-tongues (*Scolopendrium vulgare* var. *Drummondiae*). Here we have the usually smooth edge of the frond of this species, running out into fine fimbriations which, if layered, act precisely as the apical outgrowths of the *Lastrea* aforesaid. A prothallus is formed which is so prolific that it spreads *ad libitum* over the soil, developing typical plants in abundance as it proceeds, but usually by sexual action, both archegonia and antheridia being formed. The *Polystichum* prothalli presents the same prolific features, but develop very thick fleshy growths, from which further prothalli are produced in bunches in a very erratic fashion.

I may here appropriately remark that the material supplied to me in connection with Mr. E. J. Lowe's Linnean paper, entitled, "On discoveries resulting from the division of a prothallus of a variety of *Scolopendrium vulgare*, Sm." (*Journ. Linn. Soc. Bot.*, 1896, vol. xxxii, p. 529), yielded a number of plants which after, in the young stage, bearing archegonia and antheridia on the frond-tips, developed without exception into truly typical *S. v. Drummondiae*, leading me to the presumption, which Mr. Lowe does not share, that a spore of that variety, itself, as we have seen, aposporous on some fronds, normally fertile on others, produced the phenomena he chronicled, and upon which I wrote a supplementary note prior to the determination of the varietal character.

Here, then, in *S. v. Drummondiae* and *L. p. m.* apospora, we have two cases where apical apospory is as effectually reproductive as soral. Now, however, we come to a case where both apical and soral apospory are conjoined, and where the results are mixed. This case is that of a second find of *Athyrium* somewhat similar in character to *A. f. f. clarissimum*, Jones, and hence named *A. f. f. clarissimum*, Bolton. Here we have a Fern of slightly inconstant character, portions reverting to normal, while the bulk of the plant is very finely cut, and with a tendency in the terminals to twist spirally, and run out into filaments. The original find, as seen by the writer, although abundantly aposporous sorially, the backs of the fronds being quite white with the incipient prothalli, was not apically so, though the pinnæ when layered,

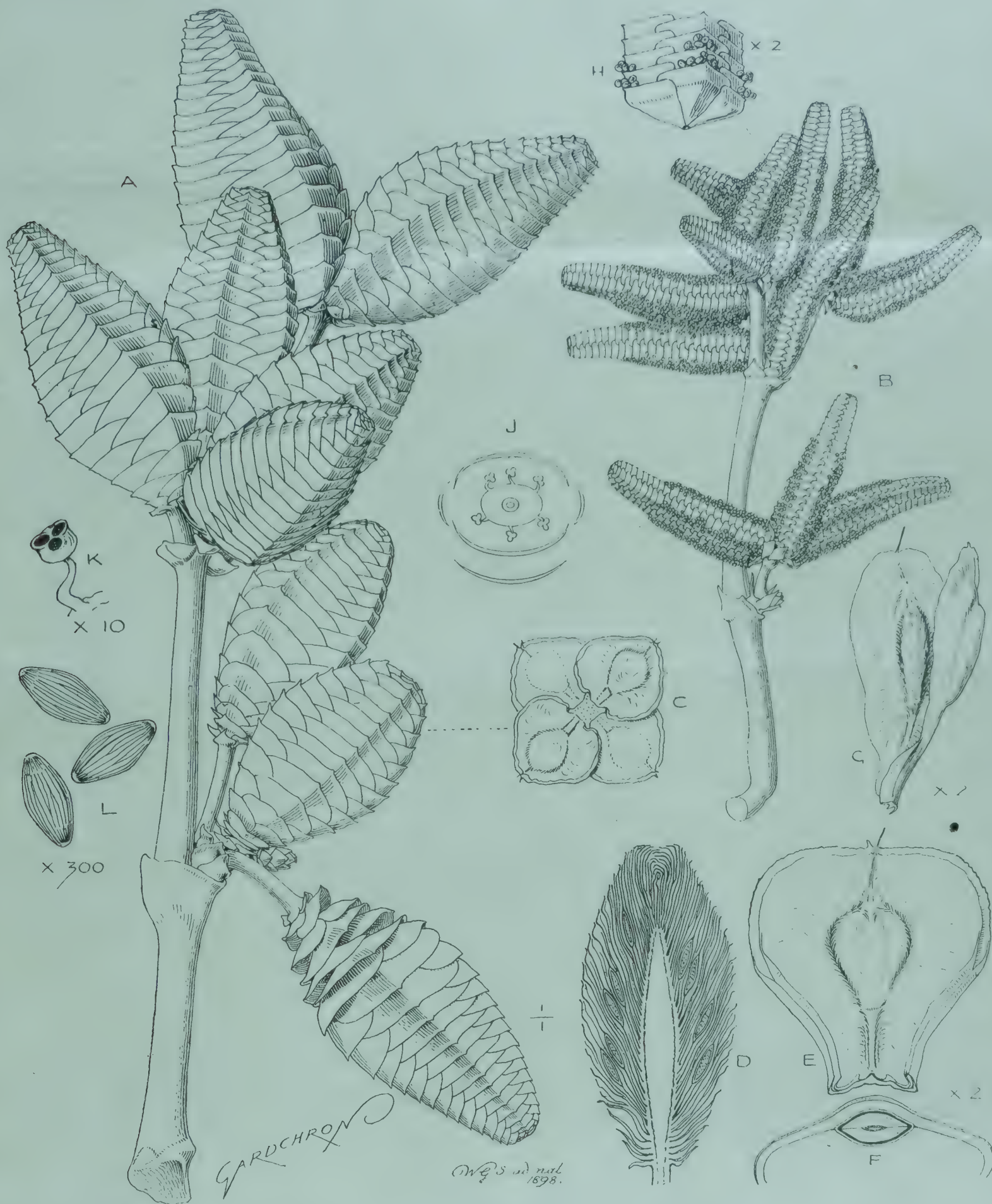


FIG. 16.—WELWITSCHIA: MALE AND FEMALE CONES. (SEE P. 68.)

- A. Female inflorescence, showing purplish cones of the real size.
 B. Male inflorescence, with anthers projecting beyond the bracts.
 C. Transverse section of female cone.
 D. Longitudinal section of female cone.
 E. Bract and perianth of female flower.
 F. Transverse section of bract and perianth, showing the seed.
 G. Oblique view, showing the bract and the female perianth, $\times 2$.

- H. Portion of male cone with bracts and projecting anthers.
 I. Plan of male or hermaphrodite flower with a bract, two outer boat-like segments, and two inner broad concave segments. The six stamens spring from a membranous tube surrounding an imperfect ovule. (See also fig. 15, p. 62.)
 J. One of the stamens showing the 3-lobed anther opening by three cracks, $\times 10$.
 K. Grains of pollen magn. 800 diam.

developed, both in my hands and in those of Dr. Stansfield, apical prothalli here and there. The soral outgrowths, however, developed so strongly and vigorously that in a very short time masses of dark green prothalli lifted the layered portions from the soil, and in due time a good crop of plants resulted. The great majority, however, were precisely of the depauperate skeleton-like character of the plants produced by apical apospory from the Shield Ferns; a few were fairly representative of the parent with its inconstant features more or less in evidence; while one, and one only, has emerged from the mob as a perfect example of the best features, minus a fault. This plant is very finely and slenderly cut, the terminals all twist spirally, like little ringlets, which are subsequently tipped with a prothallus. Late in the season, the fronds being fully developed, all the minor apices expand into semi-transparent prothalli, forming a fringe of exquisite delicacy, and meanwhile as if the Fern were brimming over with fecundity, the backs of the fronds are covered with the soral form of same phenomenon. This is the latest outcome of apospory, and seems in itself to form almost a culmination of this singular form of reproduction in both its types. A sister plant nearly as fine has gone to Kew, another is all but normal, a fourth is a ragged abomination, and a fifth is one-half a fairly typical plant, with foot-long fronds, from the side of which several extra vigorous fronds double the length are as near the common *Athyrium* as can be, a very curious and striking revision, owing to the form it has taken.

A very interesting feature of the young stages of these aposporous plants is their intermediate character between prothallus and Fern proper. The primary fronds emerging from the prothallus are usually stalked prothalli, themselves of irregular lacinate form, so that the presumed hard-and-fast line between prothallus and Fern, or oophore and sporophore is quite broken through, and in these aposporic Ferns is obviously never firmly established; the two forms of existence, with their characteristic cell formation, alternating even in the adult Fern, which, its normal outline achieved as a sporophore, alters its intention, as it were, and breaks out all over into the oophoric state.

In one of the aposporous *Polystichums*, Professor Bower, Dr. Stansfield (I believe), and myself detected soral apospory as well as apical, but all attempts so far have failed to produce plants other than the ragged, depauperate forms aforesaid. Curiously, with one exception, and that a very striking one, viz., Moly's splendidly variegated *puleberrimum*, all the aposporous *Polystichums* are inconstant and apt to revert to the normal; Bolton's *clarissimum* as a wild find does the same, *S. v. Drummondiae* bears two types of fronds, one coarsely undulate and crested, with plain normal edges and normal sori, the other finely fimbriate and apically aposporous. Hence, the majority of the aposporous Ferns are in an unfixed or unstable condition, the minority, consisting of the first find of *clarissimum* (Jones), and the *Lastrea p.-m. apospora*, are perfectly stable, both in themselves and their progeny, and the same may be said of the hitherto unmentioned case of *Lastrea pseudo-mas cristata*, a seedling of which in the writer's collection bore prothalli on its primary fronds, from which several plants of the typical *L. p.-m. cristata* resulted without the slightest modification. It is worthy of note that this variety, known as the King of the male Ferns, is the undoubted parent of *L. p.-m. apospora* aforesaid, and that it is a persistently apogamous Fern, the prothalli being devoid of archegonia, and producing asexual bulbils in their stead. In the case of *A. f.-f. clarissimum*, Bolton, selected culture through apospory has yielded us one of the most beautiful and curious Ferns existing, demonstrating that the spore is not an essential in this branch of horticulture.

Finally, or almost so, I may cite a quite new and interesting development of what is believed to be apospory in one of the progeny of *A. f.-f. acrocladon*. This *Athyrium* is the extreme form of ramose division, the fronds begin to branch at the outset and continue to do so until, instead of the normal flat

fronds and a shuttlecock arrangement thereof, we have a ball of finely comminuted moss-like vegetation. Spores are rarely produced, but the opportunity of their appearance has been seized, and a plant called *unco-glomeratum* has resulted, which far and away excels the parent in ramoseness and ultimate minuteness of division. I recently saw this plant, and it resembles a ball of velvety moss some 9 or 10 inches over. The capacity for division seems endless, and if pieces be cut off and treated as close cultures, the division continues—and here comes the point: in one case shown me by Dr. Stansfield, they had finished up as prothalli pure and simple. Last case of all, before I draw a conclusion: Messrs. Birkenhead exhibited at the Temple Show in May last, a beautiful plumose form of Shield Fern, *P. a. plumosissimum*. In this most of the ultimate divisions having completed their normal growth, form long linguiform extensions with cordate tips. These struck me as indicative of apospory, though the usual previous filiform extension was absent; and being kindly provided with material, I laid it down, and at this moment of writing can report that from the inferior surface of these extensions, horn-like excrescences are protruding, which I anticipate are incipient prothalli, but in any case are something altogether new in character, and will be reported upon later.

To sum up, the general outcome of my own observations and those of others in this connection is, that excessively fine division of the Fern fronds leads to resumption of the prothallus form at the terminal points, and as such fine division is usually correlated with sterility as regards spores, the faculty of reproduction seems to find in this way an abnormal outlet. This refers, of course, to apical apospory alone; soral apospory is due to some check upon the normal development of the sorus, which of itself finds another way of effecting the reproductive object. The two classes are in this way quite distinct, and in the case of *A. f.-f. clarissimum*, Bolton, even the coarse and nearly normal fronds bear aposporous outgrowths, instead of sori proper, while previous fine division must apparently precede the apical type of prothallus formation. *Chas. T. Drucry, F.L.S., V.M.H.*

A MODEL NORTHUMBERLAND GARDEN.

PROBABLY no two persons would apply the same laudatory terms in describing the remarkable garden of Mr. Geo. Cooke, Stanley Vale, Wylam, a retired professional gardener, who makes his chief pleasure in this life the perfection of his original ideas of gardening, though all would agree that beauty, not only in general effect, but in every foot of the limited space, was there to be found. The space surrounding the house is no larger than what is found around some of the better class of suburban villas, yet in it are carried out all the effects to be found in a well-planned garden of many acres, and thus the small garden plot is transformed into a bijou estate, and that, too, without exhibiting anything insignificant—indeed the dwarf in this case might be called a little giant, so perfect are its proportions in every detail. Used as it is, Nature may be said to have lent herself to the landscape-gardener, though placed in the hands of any other than a genius, such as Mr. Cooke undoubtedly is, it would have been dubbed a piece of uneven, rough ground, of no use for garden purposes. But Mr. Cooke had an idea of something novel and beautiful to be made on that shelving ground, with its little brook at the bottom; and hence we have at the entrance the little carriage-drive to the house, and with it the artificial seems to end, and orderly natural effects to reign supreme.

The spaces between the different little plantations and rockeries are of smooth velvety grass, and where walks are necessary they are of the same green turf, and thus the green ground-work seems to combine the many beautiful designs, each distinct in character from the other. What are known as bedding-plants find no place here, neat growing, and in a great measure dwarf Alpines and herbaceous plants are used. On the higher ground the green walks run

through beds, on one side of which is a row of dwarf pyramid fruit trees, the ground behind them being filled with patches of showy annuals, perennials, and herbaceous plants, most of them covered with flowers. In one place appears a patch of fragrant Pinks, in another of Pyrethrums, and several other patches of showy things bordered by a row of Sweet Peas; further on is a tiny kitchen-garden with more dwarf fruits, and at the end a brilliant show of delicately-tinted Shirley Poppies. On the other hand, on high ground are two low sandstone rockeries partially covered with various species of Heather, and having a narrow mountain-track between them, the rougher background being clad with close-growing *Cotoneasters* and similar trailing shrubs. In the little dell, in a steep rough rockery, are a number of hardy Ferns, very naturally planted, and appearing still more true to nature by the Grasses, Harebells, and Foxgloves which appear here and there among them. At the lowest level runs a narrow brook with shallow waterfall, and behind it is a kind of wild garden, in which are *Polygonums*, *Epilobiums*, and other pretty species, beautiful in foliage and flower. Returning by the little brook, we discover another tiny garden, its close greensward having neat clumps of *Rhododendrons*, *Roses*, &c., one bed of *Roses* edged with *Violas* being very brilliant.

Then, on the sloping ground come a series of miniature views of alpine scenery, its sandstone rocks being clad in places by 3 or 4 feet patches of Mountain Thyme, *Saxifraga oppositifolia*, and other alpines which grow carpet fashion on the ground and rocks. Through these carpets in places appear patches of the many kinds of alpine Pinks, *Androsaces*, flowering *Sedums*, and other pretty flowers, and everywhere appear the bright colours of the alpine *Campanulas*, *Saxifrages*, and *Rock Roses*, and in the larger spaces *Lilies*, *Iris*, *Oenotheras*, &c. Between the rocks is a little, irregular, stone-edged pond in which are flowering *Nymphaea alba*, *Aponogeton distachyum*, *Ranunculus aquatilis*, and other water plants, the rock behind being bright with tufts of *Thymus serpyllus coccineus*, and other tufted herbaceous plants; and all around appear pretty plants very cleverly disposed for affording a natural effect. The Conifers and other trees are in keeping with the neat form of the garden, the knife being freely used to keep each in its proper place.

It is impossible to describe this bijou-garden, but, its genial owner who doubtless knows every plant in the place, and cares for all with equal zeal and pleasure is always pleased to show it to anyone who is really interested in gardening, and is not a mere curiosity hunter. The dwelling has a pretty conservatory of bright flowers attached, beyond it is the vinery, in front of it a fine lot of *Chrysanthemums*, and behind it the bush-fruits.

THE SCHIZANTHUS AS A DECORATIVE PLANT.

"R. N.'s" remarks, *Gardeners' Chronicle*, p. 8, help to recall the magnificent displays of these fine plants that the late Bruce Findlay used to make year after year in the Botanic Gardens, Old Trafford, Manchester. His able and energetic management of these fine gardens, as Curator, and his rare capacity for organising great shows, brought the best of everything to Manchester. And yet it is hardly an exaggeration to say that all the horticultural world wondered almost as much at his graceful and brilliant displays of *Schizanthus* as at the larger white elephants of the great Manchester shows. Mr. Bruce Findlay showed his faith and confidence in these simple flowers by filling several of his larger houses with them, abreast with the very best that the United Kingdom could show at these great exhibitions.

The plants were grown in great numbers, and to the highest perfection. If I remember rightly, Mr. Findlay bloomed the major portion of them in 8 or 10-inch pots; but as "R. N." says, they may be very successfully bloomed in 6-inch or 32's. I have bloomed *Schizanthus* in 6 and in 12-inch pots. In the latter, and in rich soil, with careful stopping

and training, the plants may be moulded into free and natural bushes, or pyramids of beauty from 2 to 4 feet high. But they are more useful in smaller sizes, and have a fairy-like grace of form and colour when trained into table-plants or ranged in groups of colour on plant stages, in halls, staircases, corridors, or window gardens. The flowers have great persistency on the plants, unless they are baked off in full sunshine, and keep well when cut in baskets or vases of water, unless the rooms are too hot and close. There is little to be added to "R. N.'s" list of varieties and modes of culture, unless that by sowing at the three different periods throughout the spring and summer, the conservatory and window-garden might seldom be

should be sown in pots or broad seed-pans, half filled with finely broken crocks, and the less coarse portions of the siftings of the loam and leaf-mould used to sow the seeds in, and above these should come the fine mould, well mixed with plenty of sharp sand, leaving space for affording water, and pressing it firmly. Sow thinly on the surface, and merely bury the seed out of sight, press and smooth, and afford water with a fine rose-can. *D. T. F.*

OAKWOOD, WYLAM.

It is usual to associate the gardens of Norman C. Cookson, Esq., with the Orchids in the hybridisation of which he was the leading amateur experimenter ;

make a very fine display at this season, especially the many species of Campanulas, Phlox, Delphinium, Pæonies, Pyrethrums, Alstroemerias, and Antirrhinums.

In another part of the garden showy flowers, such as *Gladiolus Colvillei* alba, Pinks, Carnations, English and Spanish Iris, and other flowers useful for cutting, are grown ; and in the lower ground, which is beautiful with spring flowers early in the year, is a pond in which the white Water-Lily, together with a few plants of the hybrid coloured ones, are growing strongly, and the former in flower. In the centre of the garden two fine trees of Copper Beech give a good illustration of the admirable effect to be obtained by planting it judiciously, its dark foliage being not only very effective, but also serving to heighten the effect of the other trees and shrubs by contrast.

THE ORCHID HOUSES,

so far as flower is concerned, are at their rarest just now, though some few interesting subjects are still in bloom, among them we noted *Sobralia xantholeuca*, *Brassavola Digbyana*, a few *Cattleya Mendeli*, a good specimen of *C. labiata Warneri*, several plants of *Phaius Humbloti*, *Cattleya Warszewiczii*, *Lælia tenebrosa*, and a nice plant of *Cattleya* × *Hardyana*, raised from a similar cross to that imputed to the imported natural hybrid.

The best examples of culture at Oakwood are the *Calanthes* and *Phaio-Calanthes*, in the hybridising of which Mr. Cookson and his gardener, Mr. Wm. Murray, have both taken very great interest, and evolved many fine things, the last new *Calanthe*, in the depth and richness of its dark ruby-red tint, exceeding even the expectation of the raiser.

Among the *Cypripediums* many were in bloom, especially noteworthy being *C. × Youngianum superbum*, and a curious hybrid raised between *C. Stonei* and *C. Rothechildianum*, which, if not remarkably showy, is still very singular. Other good things in flower were a fine *C. Curtisii*, *C. superbiens*, *Thunia Marshalliana*, and in the cool house some few *Odontoglossums* and *Masdevallias*. Among new crosses very likely to prove of great beauty is a small lot of seedlings between *Phaius tuberosus* and *Calanthe × Sibyl* ; and among plants usually deemed difficult to grow is a fine example of *Lælia monophylla*, sending up a dozen spikes, and which has been grown at Oakwood for some years.

CAMPANULA MEDIUM CALYCANTHEMA.

THIS showy, large-flowered Campanula, familiarly known in gardens as the Canterbury Bell, has long been popular as a pot-plant to flower in early spring, and as a border plant, when it generally blooms before midsummer. The Canterbury Bell has been materially improved in appearance and effectiveness by the selection of a strain which produces flowers in which the calyces are petaloid. The accompanying illustration (fig. 17), represents such a type, the flower bearing some resemblance to a cup and saucer. Seeds can now be obtained of the nurserymen, that may be relied upon to produce a considerable proportion of these "double" flowers, as they are sometimes rather inaptly termed.

The specimen figured was grown by Mr. Faulkner, a seedsman, of Stocksbridge, near Sheffield, and our readers will admit it to be a well-cultivated, profusely-flowered specimen.

NOTICES OF BOOKS.

RIVIERA NATURE NOTES. (Manchester: The Labour Press, Limited.)

THIS is entitled a popular account of the more striking plants and animals of the Riviera and of the maritime Alps. It is only to be expected that, on opening a book upon such a subject as this, we should find in it frequent traces of the work of Commendatore Thomas Hanbury. To him the publication is dedicated, and under his supervision it has been published and annotated.

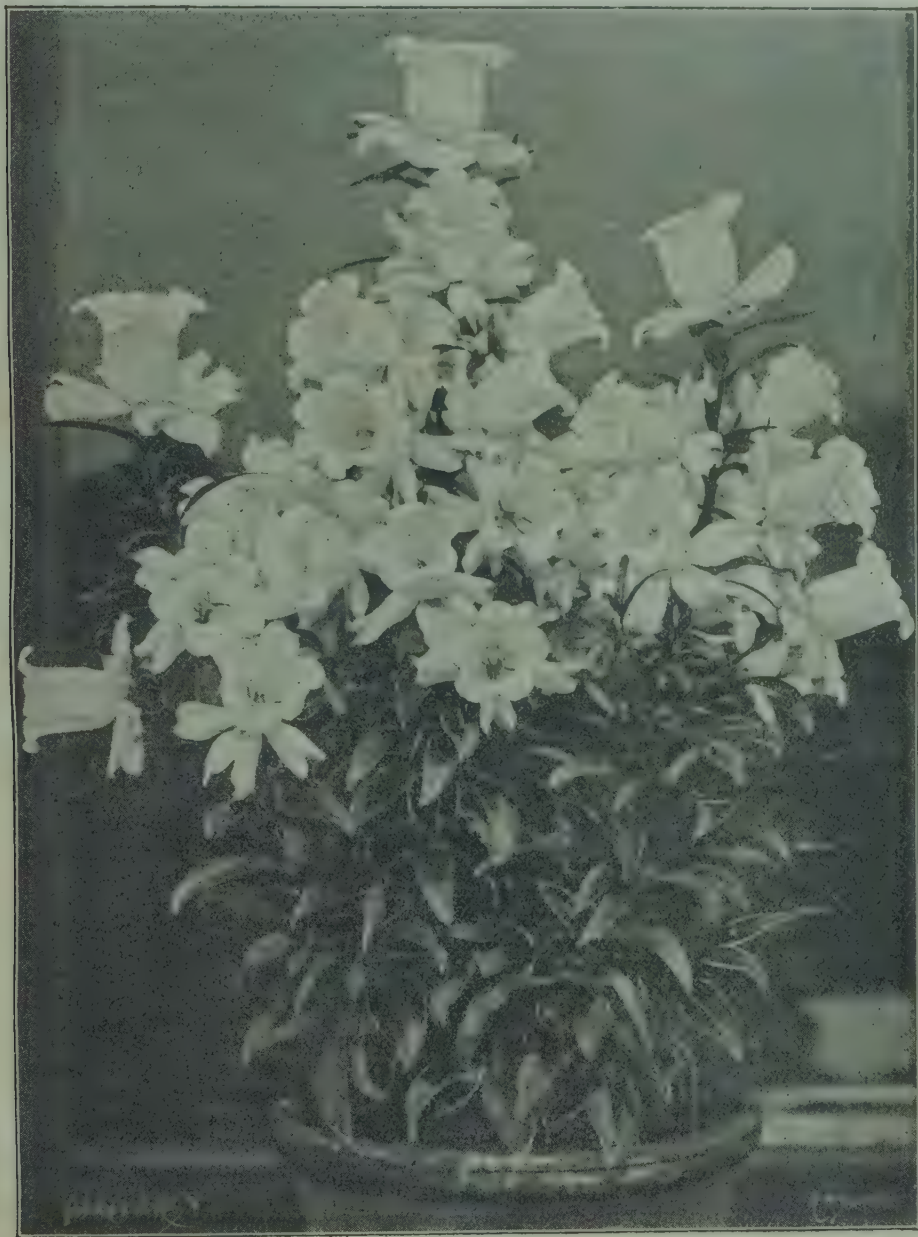


FIG. 17.—CAMPANULA MEDIUM CALYCANTHEMA.

without these graceful flowers. The sub-variety, *S. Grahami retusus*, is perhaps the most beautiful of all, having white flowers with crimson tips. The pure white *S. candidus* is very welcome with the others. *S. Hookeri* is also pretty, though it is much like *S. Grahami*. All the varieties of *S. pinnatus*, including *Priesti*, a very pure white form, may also be grown in the open air, and may be sown in March, April, and May, to ensure a longer succession.

To ensure a yet earlier flower in the open, a first sowing may be sown in warmth in February, to be planted out of established pots in May. The best season to sow the seeds for winter, spring, and early summer blooming in pots are the months of August and September, raising the seedlings in a cold pit. According to the number of plants required, the seeds

but hardy plants and shrubs are also specially cultivated in this pretty Northumberland garden, and in point of floral display have, at this season of the year, a decided advantage over the Orchids. The gardens occupy the crown of a hill, and are beautified by sturdy Oaks and other trees, whose shade is made use of in the cultivation of shade-loving plants. The broad borders beside the carriage-drive, and skirting the smooth, green pleasure-ground, have large masses of various shrubs, Conifers, &c., planted at the back ; and mingled with those grown for their evergreen foliage, are a fine selection of flowering-trees, such as the white and coloured *Cratægus*, *Spiræas*, *Rhododendrons*, *Roses*, &c., many of which have been, or still are, in great beauty. The fronts of the clumps are planted with showy herbaceous perennials, which

The author, "C. C.," explains in his preface that he has "attempted to make the subject popular, and even amusing. Writing for those to whom natural history is a recreation, it does not seem necessary to adopt the serious style of a scientific treatise." This introduction prepares us for the rather discursive style of the book, wherein anecdotes and "side issues" frequently interrupt the subject-matter. Yet there is so much to say about both the flora and the fauna of so favoured a region as the Riviera, that a small volume can at best but briefly mention a few of the more important features.

Beginning with "grassy places"—for the most part quite unlike our British meadows and lawns—the author passes on to the Great Reed (*Arundo Donax*), to Indian Corn, and to Giant Grasses.

The next and brief section is on Gardens and Gardeners, whence we are led to Plants of Palestine, concerning which it is written that "it is remarkable how many plants mentioned in the Bible are common on the Riviera." This is indeed so much the case, that many more of those described here might have been included under this heading.

It is difficult to see on what plan "C. C." has arranged his "Notes," since chapters on poisonous plants, and Gourds and Pumpkins are divided by others dealing with Green Frogs, Mosquitos, and similarly varied subjects. Again, Myrtle and Eucalyptus, Date-palm and Oak, are separately treated of, although there is a special chapter allotted to Trees.

We do not mean that this detracts from the interest or "amusement" of the volume, but, in spite of the index, it certainly adds to the difficulty of reference. There is, besides the lighter reading, some information of which any intending sojourner in the Riviera would do well to avail himself. We allude to such chapters as those on Sunshine and Shade. The interesting chapter on the Ligurians, Peculiar Plants, Rare and Local Plants, the Sunny South, and Flocks and Herds in Provence.

Now and then "C. C." writes more seriously, as when he says: "At the roots of the Fig-tree you will often find growing either a clump of Iris or the huge bulbs of the Giant Squill (*Urginea*). These remain above ground: they are sometimes as large as the head of a young child. I have often wondered whether the Iris grows spontaneously below the Fig. Certainly the Squill is planted there, for several peasants have not only assured me that this is the case, but have given me the reason for it. The Squill, they say, is useful to the Fig. I should not be surprised to learn that this utility, if such there be, is in some way connected with fertilisation, or with the intricate question of Caprification."

As said before, the book is not botanical only, but general in character, for though the major part of it is devoted to matters connected with the Riviera flora, there is also mention of the wild animals, shells, birds, butterflies, and moths, lizards, and the small quadrupeds. The "Notes" end with an account, by Dr. Allen Sturge, of prehistoric man on the Riviera.

Among the illustrations are included, appropriately enough, views in the gardens of La Mortola. There are also other landscapes showing characteristic vegetation, and many smaller figures of plants, animals, &c. On the whole, the book is certainly an acceptable addition to the local histories of a beautiful spot; and, indirectly, is yet another well-deserved tribute to him who has done so much for the district—to Commendatore Th. Hanbury.

INSECTS: FOES AND FRIENDS. By W. Egmont Kirby, M.D., with preface by W. F. Kirby, F.L.S., F.G.S. (London: S. W. Partridge & Co.)

THIS is a useful little treatise, described in the preface as an English adaptation of a little book which has had a large sale in Germany; but the book and its author are not otherwise mentioned—a serious omission even in a book which is professedly only a compilation. There is no table of contents, but we discover that the insects are arranged primarily into those which are injurious to cultivated plants and trees, as, A, accordingly as they attack the roots mainly; B, the stems of plants; or, C, the

leaves. Useful insects are wedged in between those that are known marauders; and then we come to, D, insects living upon flowers; E, insects living on fruits; then more useful insects immediately in front of the destructive *Bruchus pisi*.

In a secondary subdivision, insects injurious to fruit trees are alluded to, according as they attack the roots, trunk, foliage, &c., useful insects again being sandwiched in unexpectedly. The insects injurious to Gooseberry and Currant-bushes and to Vines, have a section to themselves. Thirty coloured plates, an English and a Latin index, will render this book very serviceable, especially when its low price is considered.

BELGIUM.

THE Ghent Avenir Horticole, under the presidency of M. Armand de Meulenaere, organised fêtes in celebration of the twenty-fifth anniversary of its foundation. In addition to a banquet, on July 10, during the Ghent Kermesse, a competition was held for decorated façades, balconies, and windows, which proved highly successful. On the same day there were also a floral parade, cycling competitions, and a battle of flowers. Some of the carriages, decorated with Orchids, Roses, white Lilies, Anthurium Scherzerianum, or Cornflowers, were much admired. The fêtes were attended by M. Braun, Burgomaster of Ghent, and among the jury was Mr. R. Silberrad, of London. *Ch. de B.*

COLONIAL NOTES.

NATAL.

MR. J. MEDLEY WOOD and Mr. Maurice Evans have commenced the issue of a series of quarto plates illustrative of the plants of Natal. The book is entitled, *Natal Plants: Descriptions and Figures of Natal Indigenous Plants, with Notes on their Distribution, Economic Value, Nature, Names, &c.* The Natal herbarium at Berea now contains about 7500 authentically-named specimens, so that with the aid of this book the difficulties in the way of students will be very materially lessened. The completion of the *Flora Capensis*, which we may hope is now fairly in view, will enable a separate Flora of Natal to be readily accomplished, though we are justified in expecting the discovery of many novelties in course of time. The drawings are naturally and faithfully executed by a born inhabitant of Natal, and by a lady who has passed the greater part of her life in the colony.

The only thing we can suggest is, that in some cases the analytical details are too small. So many bulbous and other showy garden-plants are natives of Natal, that we shall watch with much interest the continuation of this serviceable publication.

VICTORIA.

We are having our rainy or winter season now, of which we stand in great need. We have had very hot weather during the past summer, and no rain, or scarcely any, for six months, so you may imagine how glad we are of a good downpour. I have not yet seen any snow or ice since I have been in the colony. I sometimes think I should like to; it would be more like home weather. Take it altogether, the climate is very healthy here. As regards my business, I am glad to say it has an upward and improving look. And should we get Federation of the Australian Colonies, I believe it would be a boon to every kind of industry. At present we cannot even send plants to either of the other colonies, see annexed newspaper cutting:—

"LAUNCESTON, Monday.

The first prosecution under the newly framed fruit import regulations was heard at the local police court to-day, a well-known lady citizen being prosecuted for importing from Melbourne a plant which she had taken ashore from the steamer *Pateena*. The case was adjourned for a week, that the opinion of the Crown law officers might be taken in interpretation of the word 'plant.'"

B. T. James.

THE WEEK'S WORK.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

Carnations.—The layering of these plants should be forthwith commenced, so as to get the layers early rooted and fit for planting, and established where they are intended to flower, or put into their winter quarters early in the autumn. In layering, first strip off the leaves from the base of all the stems that are to be operated upon, then, having scooped out a hollow round the plants, fill it with a mixture of leaf-mould and sand, in which to root the layers. Having done this, with a sharp knife make an upward cut from one joint to the other, and half-way through the stem, just below a joint, in a part that is of moderate firmness, bending it till the tongued part is in contact with the soil, fixing it there with a wooden or a wire peg, with the tongue separated somewhat from the stem; and having done this, cover slightly with some of the prepared soil, and so proceed with all the layers from a plant, finishing off the soil level and flat. Keep the soil moderately moist till rooting takes place. In a month or five weeks the layers should be sufficiently rooted to be severed from the parent-plant. When from excessive moisture, damp situation, or smoke and fog, Carnations have to be wintered under glass, then the layers when rooted must be placed in small flower-pots and stood out on a bed of coal-ashes till the time comes to remove them to the cold frames. Where very large quantities of plants are grown, doing this involves a great deal of labour, and it is therefore not possible in undermanned gardens, and the beds and plants have to take their chance. Carnations should be well manured and deeply dug, and if the staple is heavy and retentive, leaf-mould and road-grit, or sharp pit or sea-sand, and charred soil should be freely mixed with it. The situation for the beds should face the south, and it is always advisable to afford the plants a change of ground each year, in order to prevent the degeneration of the former; and continual propagation from the same stock of plants is another cause of degeneration. Plants from fresh sources should also be introduced occasionally to avert this. The borders and beds from which layers are taken should be afforded one or two abundant applications of water. In my next calendar I will mention the names of a number of varieties of recent introduction, which are acquisitions.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorset.

Vandas.—Plants of *Vanda teres* that have just bloomed, and that have stems of an inconvenient height, may be cut off at about 2 feet from the top, and the tops inserted into pots which have been half filled with sphagnum-moss. Do not crowd them together too thickly, or they will not obtain the necessary amount of light. Place the plants in a sunny corner of the Mexican-house, or in the ordinary plant-stove, and well syringe them overhead several times each day. The scandent habit of the plant renders some amount of training needful, and this should be done as often as needed. The aerial roots will soon take hold of the sticks if the plants are vigorous. *V. teres* will grow equally satisfactorily and bloom well when trained to upright Teak-rafts, the raft being inserted into a pot, and firmly fixed with crocks, covering the drainage with sphagnum-moss. Old stems from which the tops have been cut off, if given the requisite heat and moisture, will soon emit fresh shoots, and when these are about a foot long they may be severed, and the stock increased thereby. The new *Vanda* × *Mis* Joaquim is a hybrid of exquisite beauty, and requires the same kind of treatment as *V. teres*. *V. Hookeriana* is now showing flower-spikes, and should be placed in the hottest house in a sunny position; spray the plants frequently until the flowers expand. *V. Kimballiana* and *V. Amesiana* grow best at the coolest end of the Cattleya-house, in a position where fresh air can circulate freely around them; these species should not be syringed overhead, or the leaves may become spotted. *Vandas* of the *suavis* and *tricolor* group need a well-regulated intermediate temperature (especially through the heat of summer), a constantly moist atmosphere, and sufficient water to keep the moss on the surface fresh and green. These plants are apt to lose a number of their lower leaves at this season, but it is usually the result of overflowering, or of a very dry, close atmosphere; they delight in an abundance of fresh air at all times.

Grammatophyllums.—Plants of *G. Measuresianum* and *G. multiflorum* that have started to grow may be repotted, and *G. Ellisii* may also be afforded fresh compost immediately the flowers fade. Shallow pans, with perforated holes around their sides, are preferable to pots for these plants, and they should be small in comparison to the sizes of the plants. The best compost is fibry peat, from which all the fine soil has been sifted, but a few pieces of crock should be added. Press the peat firmly around the base of the plant, and prick in over the surface a few heads of living sphagnum-moss. Suspend the plants afterwards in a warm, shady part of the Cattleya-house, and give water with special care until each plant has become established. The safest method is to sprinkle around the edges of the pan with a fine rose-pot till new roots are seen through the holes. When roots have become numerous, remove the plants to a light position on the north side of the hottest division, and gradually increase the amount of water given.

Galeandra devoniana and *Ansellia africana* are difficult of cultivation in many collections. Both species are commencing to root, and may be repotted if necessary. Place them with the *Grammatophyllums* in the East Indian-house, and afford them the same kind of treatment.

Temperatures.—In the East Indian-house, such Orchids as *Dendrobiums*, *Aërides*, *Phalenopsis*, *Calanthes*, &c., are now in full growth, and an even temperature must be maintained at this period. Fire-heat must not be dispensed with altogether, for stagnant and impure air may by its use be expelled. The pipes should be made sufficiently warm to maintain a temperature of about 75° when finishing up for the night, and regulate the damper so that the temperature will fall about 5° or 6° by morning. If a very small amount of air be afforded the last thing at night at the apex of the root, it will further assist the circulation of air. Coolness at night, combined with excessive moisture, which accumulates around the plants during the early hours of the evening, is generally the principal cause of "spot," so often seen on the foliage of heat-loving Orchids. In the Cattleya and intermediate-houses the pipes should be kept just lukewarm through the night. No fire-heat is needed for the *Odontoglossum* or *Masdevallia*-houses.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

The Strawberry.—The layering of runners, if they are required for fruiting next year, should be finished as soon as possible, layering a good many more than the actual number required, so as to have strong plants to select from for potting; the remainder will be suitable for forming beds. To encourage rooting, water must be afforded daily in dry weather; and should the bed be dry, a liberal application of water will be very necessary. Examine the under side of the leaves of the stock-plants for traces of mildew, and should any be found, mix flowers-of-sulphur into a paste, and add it to the water used, in the proportion of $\frac{1}{2}$ -pint to 2 gallons of the latter, stirring it well before applying it with a syringe, and directing the stream on to the under-side of the leaves of both old and young plants. This is the easiest and cheapest method of ridding the plants of this fungus, and if it be performed a few days before the young plants are severed from the old ones, they will be clean when potted. The runners should be severed from the old plants when their roots have permeated the soil in the pots, which the first layers have already done. After severance, place the runners in the shade for a space of two days, then in their pots in which they are to fruit, a 32, or one that is 6 inches in diameter by inside measurement, which is big enough for early and late forcing. Be sure that the pots are quite clean inside and out before being used, and if they are new soak them in water for several minutes. In potting it is sufficient if one stout concave piece be placed over the hole, and three or four pieces about 1½ inch square, with one edge resting on this, and a few small pieces on these; and to keep the soil from choking the drainage place a thin layer of moss or fibry matter out of the loam used, over which sprinkle a pinch of fresh soot. The best kind of soil is a medium light pasture loam. If loam of this kind be not obtainable, and a heavier kind has to be used, it should be made lighter by the addition of one-eighth to one-tenth of charred soil. The loam used should be chopped with a spade, in pieces about the size of pigeon's eggs, and to each wheelbarrow-load a 4½-inch flower-potful of fresh soot should be added, and thoroughly mixed with it. The soil should be in a moderately moist condition when used, and if it be

dry, moisten it slightly whilst mixing it. Let the potting be performed with the aid of a potting-stick, making it first firm before putting in the runner. Spread out the roots slightly, and bury the new plant a little below the soil, leaving plenty of space for holding water. The potted plants may be stood on an area covered with coal-ashes, standing them close together, and affording more and more space as the leaves extend beyond the rims of the pots. The spot should be well exposed. Afford a liberal application of water with a rose-watering-can, and afterwards afford water to those that require any, and on fine afternoons use the syringe with clean water among them, directing it on to the under-side of the leaves. Never allow runners to grow. Good varieties for forcing are Royal Sovereign, Vicomtesse H. de Thury, Sir C. Napier, and President; and for late use British Queen. This year, late in the season, I gave a limited trial to the new Countess, a variety I was much pleased with.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Celery.—Much attention should be given to these plants, so as to maintain growth in them without a check, by keeping the soil always moist, and stirring its surface at frequent intervals. The latest crops should be planted without delay, affording the soil in the trenches if dry a copious application of water previous to putting out the plants.

Early Potatoes.—When the tops get yellow, lift the crop, and do not wait till the shaws die down. Having dug up the tubers spread them out in a shed on some garden-mats till the skin gets hardened, then store them, keeping a sufficient number for sets apart from the rest. Should new Potatoes be in demand during the autumn, plant any of the quicker growing varieties on a warm border.

Endive.—The plants raised from seeds which were sown in June, will now be large enough to transplant on a moderately rich, not over-warm spot, affording water, and shading them from strong sunshine till growth begins anew. Seeds of the green curled, white curled, and small or large Batavian Endives, may be made thinly in lines or broadcast in beds, protecting the same from the birds; and if the weather be hot and dry, covering the seed-beds with mats till germination has taken place, but not a day longer.

French Beans.—A small sowing of quick-podding, dwarf-growing early varieties may be made on a south border, and in such a manner that protection may, if necessary, be afforded them in the months of September and October.

Runner Beans.—The rows or circles of these Beans will, in light soils, stand in need of water at the root; and in the case of light land, a manurial mulch alongside the rows will tend to keep the plants in growth and flower, and prevent Thrips destroying the bine.

Herbs.—Let all sorts of herbs be gathered as they become ready, drying and storing them as previously directed.

Salad Plants.—Seeds of Radishes and Mustard-and-Cress may be sown frequently this month, also white and brown Cos Lettuces. The dry hot weather will have caused the rapid bolting of Lettuces, and these bolted plants should be cleared off the ground forthwith to prevent the exhaustion of its fertility.

Winter Onions.—Let a portion of a warm border be prepared for this crop in the same manner as that advised for spring sowings; and when it has been got into proper order, sow seeds of the Strasbourg or Globe Tripoli Onions, sowing rather thickly, so that a sufficient number of plants will be raised for drawing for use and for transplanting to other beds. An Onion-bed should always be made on a deeply-dug, heavily-manured piece of ground, and the surface should be reduced to a fine state of tilth, and made firm and level before sowing the seeds.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

The Apricot.—The summer pruning of Apricot-trees being now completed (that is, the shoots not required being cut back to the lower triplet of full-sized leaves, and leaders stopped or not as may seem called for), the temporary laying-in of the shoots may be performed. By reason of the habit of making short spurs, the Apricot is inclined to carry its bearing-wood at some distance from the face of the wall, and at right angles to it, which is a drawback to successful cultivation in the colder parts of the country. If long spurs have resulted from the

practice of letting them entirely or partially unshortened, wherever there are any conveniently placed they may be laid in against the face of the wall at this season, and such spurs as are without fruits removed, so as to allow the new wood a chance of ripening. Search should be made for a small shell-snail, which does damage to the fruits; and traps set for the equally destructive woodlice and earwigs. A copious application of water to the border will add to the size of the fruits, and prevent untimely ripening.

Pears.—All Pear-trees too abundantly cropped should now have the numbers reduced in accordance with the size, vigour, and age of the trees, and the size to which the fruit attains. Whilst dry weather lasts, the border should be afforded water and weak manure-water at intervals of ten days; and to weak-growing trees, applications of Thomson's Vine-manure will do good. The growth of the Pear is late this year, and for this reason the young shoots should remain at full length for the present, excessive cutting away of young growths during the summer weakening the trees by its action on the roots.

Peaches and Nectarines.—Let the trees be heavily syringed with clear water in the evening when the day has been bright and warm. If red-spider prevails to a great extent on any tree, make use of Gishurst compound-soap dissolved in rain-water at the rate of 4 oz. to 1 gallon, rinsing it off with clear water half-an-hour afterwards. Keep all young shoots nailed, laid, or tied in, and all laterals pinched hard back, in order that the fruit may get its full colour. All nails that are within an inch of a fruit must be removed forthwith. The Peach-trees after stoning require a plentiful supply of water if the weather be warm and dry; and liquid farmyard manure may be afforded old trees that may seem to need a fillip, or instead, two applications of Thomson's Vine-manure at the rate $\frac{1}{2}$ lb. to the square yard may be afforded, allowing an interval of three weeks between the applications.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to C. H. BERNERS, Esq., Woolverstone Park, Ipswich.

Lachenalias.—A batch of bulbs may now be placed in 5 or 6-inch pots, selecting those which have been longest at rest. The potting-compost should consist of two-thirds fibrous-loam, and one-third leaf-mould and decayed manure, with some small quantity of sand. The drainage should be ample, as when growing freely the plant needs much water. The tubers when potted may be placed in a cold frame, watered abundantly, and covered with half-decayed leaves or similar materials, removing these when growth has begun.

Scented-leaved Pelargoniums.—A timely shift into a larger pot should be afforded these plants, before they become pot-bound, encouraging them to make healthy growth. They are useful decorative-plants, or as yielding shoots and foliage for cutting in the autumn. To induce a bushy habit, pinch out the points of the stronger shoots, and tie out a little if much compressed. Specimen-plants in full growth may be assisted by frequent applications of weak manure-water, varying it occasionally with clear soot-water. Insects must be exterminated, or the plants will soon be rendered unsightly. Plants intended for autumn use should be plunged outdoors, and well supplied with water at the root.

Acalyphas.—As table-plants these are very effective, either by daylight or artificial light, and this is a good season in which to put in cuttings, and grow them on when rooted in a brisk warmth and a humid air. They soon make plants fit for use in autumn decorations. The cuttings must be shaded from sunshine, or they will lose their leaves, and it is essential that these should be retained down to the bottom of the stem. A close propagating-case, hand-light, or big bell-glass, must be employed to cover the cuttings.

Marguerite-Chrysanthemums.—Any of the cuttings struck in the spring which have not received the final repotting should receive attention forthwith, or becoming pot bound, they will get stunted, hide-bound, and lose their lower leaves. Let the points of the shoots be nipped off wherever this is necessary to produce a bushy growth, and the plants be plunged in coal-ashes outside. Old plants that have flowered and been standing out-of-doors for some time may be cut in hard, and kept somewhat drier at the root till they break. If cuttings are procurable, they may be stuck round the edge of 5 or 6-inch pots in sandy soil, placing these in a close cold frame. When the cuttings are furnished with roots, let air be admitted gradually till they are hardened off. They may be shifted into pots, and the points of the shoots pinched off a few days afterwards.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JULY 23	Royal Botanic Society, General Meeting.
TUESDAY, JULY 26	Royal Horticultural Society's Committee. Tibbself Rose and Horticultural Society.
WEDNESDAY, JULY 27	National Carnation and Picotee Society's Show, at the Crystal Palace. Beckenham Horticultural Society's Show. Brightstone (Isle of Wight) Horticultural Show.
THURSDAY, JULY 28	Bedale Rose and Horticultural Show.
FRIDAY, JULY 29	Redhill and Reigate Carnation and Picotee Society's Show.

SALE.

FRIDAY, JULY 29	Imported and Established Orchids, at Protheroe & Morris' Rooms.
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AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—63° 3°.

ACTUAL TEMPERATURES:—

LONDON.—July 20 (6 P.M.): Max., 66°; Min., 55°.

PROVINCES.—July 20 (6 P.M.): Max., 71°, Valencia; Min., 51°, Sumburgh Head.

Fine, warm.

The Welwitschia. THE discovery of the Welwitschia, or, as it was first called, the Tumboa, about the year 1860, caused the greatest excitement in the botanical world. One of the earliest, if not the very earliest, public mention of this strange plant was in our own columns (1861, p. 74), in the form of a notice of a meeting of the Linnean Society. Many years after we were privileged to figure the young seedling plants, which showed that the previously-held notion that the huge strap-shaped leaves which the plant possesses were not, as had been thought till then, the persistent seed-leaves (January 7, 1882, p. 15, figs. 2, 3). The classic monograph of Sir JOSEPH HOOKER (then Dr. HOOKER), was published in the *Transactions of the Linnean Society* in 1863, and excited the greatest interest. It was richly illustrated, and most of the figures which have been published since have been copied, with or without acknowledgment, from this famous monograph. In 1866, pp. 734, 778, and 851, various comments were published in our columns by the late ANDREW MURRAY.

Welwitschia is not a plant which would stir the interests of the Floral Committee; but for all that, no plant of any kind has elicited so much interest as this ugly denizen of the arid deserts of South-west Africa. Specimens may

be seen in many museums, where its huge, saddle-like stems and its pair of gigantic thong-like leaves attract attention, if not admiration. A living plant exists at Kew, but its rate of growth is slow. From the edge of the saddle-like stem emerges the inflorescence. One which bears cones like those of a Fir in appearance is female, and bears flowers with a perianth, whose features are portrayed in the illustration (fig. 16, p. 63). The female perianth, when mature, or approaching ripeness, is flattish, roundish, membranous, with minute veins radiating from the centre, and enclosing the seed, whose dispersal is favoured by the membranous wing. These cones are borne in a branching panicle, and being of a crimson or purplish colour, are by no means unattractive.

The male, or hermaphrodite catkins, are borne in similar panicked cymes. The catkin consists of bracts of a golden-brown colour, subtending a membranous perianth of four pieces, the two outer boat-shaped and acute; the inner obovate, broad, and placed cross-wise (fig. 15, and 16 J). The six, or rarely five or even four stamens, emerge at first as a membranous-tube or cup, dividing ultimately into filaments, each bearing a three-celled roundish anther, dividing by three cracks, to liberate the elliptic pollen-grains. In the centre of the flower is an erect abortive ovule, with a curious trumpet-like prolongation of the outer coat, simulating the stigma of other plants.

We have not thought it needful to describe the flowers minutely, as that has already been so thoroughly done in Sir JOSEPH HOOKER'S memoir already alluded to. We have, however, availed ourselves of the opportunity afforded us by Mr. K. DINTER, of figuring the male and female inflorescence, because the *Linnean Transactions* are not always available; and moreover, our figure, especially of the male inflorescence, is more complete. We may also refer to the very interesting account of the habitat, and of the mode of growth of the Welwitschia by our correspondent Mr. K. DINTER in German South-west Africa, as given at p. 27 of the present volume.

The illustrations have been executed for us by our long tried friend Mr. WORTHINGTON SMITH. Comparatively little has been added to Sir JOSEPH HOOKER'S account of the structure. Dr. McNAB examined the development of the flower, Prof. STRASBURGER that of the embryo, Prof. BOWER has studied the course of germination, and the late Prof. DE BARY investigated the anatomy of the stem.

Weather influences on Farm and Garden Crops.

MR. EDWARD MAWLEY, in a paper on "Weather Influences on Farm and Garden Crops," shows how intimately meteorology, horticulture, and agriculture are connected. He alludes to the vast differences, as determined at Rothamsted, in the amount and quality of the crop according to season, and then discusses the climate of the British Isles in general. The requirements of particular crops are dealt with, and in spite of all defects, it is concluded that in no other country in the world can be cultivated so many plants coming from widely different localities with equally different climates. Rev. WOLLEY DOD endorses this view, and it is no doubt the correct one. Taking the mean dates for the Midlands as representing the country as a whole, Mr. MAWLEY finds, as a rule, that East England is, as regards the opening of flowers, three days early; south, five days; south-west,

six days; north-west, two days late; Ireland, north, five days late; north-east England, nine days late.

In conclusion, Mr. E. MAWLEY lays stress upon the importance of the influence upon crops, of changes in the weather. He says:—

"There are a few lessons which all tillers of the soil, whether in garden or on farm, may learn from a consideration of this question of the effect of weather upon vegetation, viz.:—

1. To grow such crops and such varieties of each as can be cultivated with the greatest success in the soil at their disposal, and in the particular climate in which their lot may be cast.

2. To follow the best modes of culture for each crop. For it will be found that crops on ill-cultivated land are, as a rule, far more at the mercy of seasons than those on land which is highly cultivated. Besides which, it has been shown at Rothamsted that a full crop, instead of impoverishing the soil, leaves it, as a rule, in better heart than a poor one.

3. It is also advisable not to place too many eggs in one basket, but rather to grow a variety of crops, knowing, for instance, as we do, that a season favourable for grass and roots is often unfavourable to corn, and vice versa.

4. Another very important lesson taught by the fickleness of our climate is that each farm and garden operation should, as far as practicable, be begun directly a spell of weather favourable for it sets in, for we never know how soon such a propitious period may come to an end, or how long the adverse conditions which may succeed it will continue."

GARDEN ROSE, "DAWN."—In fig. 18, our artist has well portrayed one of the showiest and most beautiful of new garden-Roses. Dawn is a very large single or semi-double flowered Rose, of charming rosy-pink colour. We first noticed it at the Crystal Palace Rose exhibition in 1897, when Messrs. G. PAUL & SONS, Cheshunt, included it in their 1st prize collection of thirty-six varieties of garden-Roses. Since that time the firm has exhibited the variety frequently, and its flowers have been admired again and again. The habit of the plant is described as good, and it is a profuse bloomer. The specimens figured were shown at the last meeting of the Royal Horticultural Society.

ROYAL HORTICULTURAL SOCIETY.—The next fruit and floral committee meeting will be held in the Drill Hall, James Street, Westminster, on Tuesday, July 26, from 1 to 5 P.M. Bamboos will be a special feature at this show, and at 3 o'clock Mr. A. B. FREEMAN-MITFORD, C.B., will lecture on the "Economic uses of Bamboos."

"KEW BULLETIN."—The June number contains articles on Tea Blights, an account of various fungi injurious to Tea in India, drawn up by Mr. MASSEE; who also contributes descriptions of various exotic fungi. "Miscellaneous notes" justify their title. The acquisition of a Totem Pole made from the wood of *Thuya plicata* = *gigantea*, is very interesting.

LINDLEY LIBRARY.—The Catalogue of the Library is, we learn from an official document, now actually ready to be put into the hands of the printer, but the preparation of it has been a far more lengthy and expensive matter than was anticipated, and the Trustees have come to an end of their funds. Subscriptions, to enable them to go to press with the Catalogue at once, are earnestly requested. Address: Secretary, Royal Horticultural Society, 117, Victoria Street, London, S.W.

— We are requested to acknowledge the receipt of £1 from BRODIE of Brodie.

TWO SCARCE BOOKS.—In revising the Lindley Library, the two following books have been discovered, concerning which little is known. The *Flora Londinensis*, it need hardly be said, is not the work with the same title issued by CURTIS. There is no indication of the author, and the only hint as to



FIG. 18.—ROSE "DAWN": COLOUR ROSY-PINK. (SEE P. 68.)

date is given by the watermark to the paper, which is 1794, so that the book can hardly have been published before that date. The *Fruiterers' Secrets* is in black letter, and is mentioned in Johnson's *History of Gardening*, and in Miss Amherst's *History of Gardening in England*. It was republished in 1609, under a different title.

THE FRUITERS SECRETS:

Containing directions, for the due time, and manner, of gathering all kinds of fruits, as well Stone-fruits as other: and how they are afterwards to be ordered in packing, carrying and conveying them by land or by water; then in separating or culling them into divers sorts; and lastly, in preserving or laying them up, so, as may be for their best lasting and continuance.

Enterlaced with diverse other secrets (and their natural causes) touching trees, and their fruits.

No treatise, to this purpose, being heretofore published.

At London,

Printed by R. B. and are to be Sold by Roger Jackson, at his Shop in Fleete-Streete, neere the conduit. 1604.

FLORA LONDINENSIS OR THE Flower Garden displayed

ON NINETY-SEVEN PLATES

of elegant figures of Flowers, Plants and Trees the Production of the Gardens in and round London

Drawn from Nature by a Botanical Painter and accurately engraved by an eminent Artist, with a description of each flower, its culture, &c.

London

Printed for the Proprietor, no 31 East Place Lambeth &c.

—Who was the proprietor?

THE ATTENDANCES AT THE DRILL HALL.—

The good people of Newcastle were last week apprised of the increased importance and popularity of the meetings that the Royal Horticultural Society hold fortnightly at the Drill Hall, James Street, Westminster. Sir TREVOR LAWRENCE, when speaking at the luncheon, on behalf of the deputation from the parent Society in London, said that the Director of the Royal Gardens, Kew, had remarked to him that James Street, in which the Hall is situated, is frequently so thronged with visitors that it is difficult to move without treading on the heels of a Duchess. Those who habitually attend these meetings will appreciate this remark, knowing well that, comparatively, the altered circumstances at these exhibitions may be held to justify such a comment. "So long," said Sir TREVOR, "as the Society fulfils the real duties of a horticultural society, would it succeed." Just so, and the present measure of success has resulted from the practice of such a policy.

MR. T. HUMPHREYS, of the Chiswick Gardens, who was recently so seriously injured by a cricket-ball, is now, we are glad to learn, so far recovered that he has gone north for a change of air.

OROBANCHE SPECIOSA.—From Trinity College Botanic Garden, Dublin, Mr. BURBIDGE obligingly sends us specimens of this plant, grown by sowing seeds along with those of the Broad Bean, on which it is parasitic. The stems are viscid, purple, and bear many-flowered spikes. Each flower is about three-quarters of an inch long, white, flushed, and lined with narrow lilac stripes; the rounded lobes of both upper and lower lip are prettily fringed. The bract is lanceolate, nearly as long as the flower-tube. The plant is a native of Spain, Italy, Dalmatia, Greece, &c.

UNSEASONABLE FLOWERING OF A CHRYS-ANTHEMUM.—Mr. J. F. N. BARTLETT, of Peverel Court, Aylesbury, obligingly sends us a photograph of a Chrysanthemum "niveum" in full bloom. It

was raised from a cutting taken this year. The photograph is a good one, and the blooms are satisfactory; but we do not at all want to anticipate the deluge we may expect in November—for everything in its season.

THE LEGION OF HONOUR.—M. ROMAIN DE SMET and Mr. CHARLES VUYLSTEKE have been nominated Chevaliers of the Legion of Honour.

SCOTTISH ARBORICULTURAL SOCIETY.—The general meeting will be held at 1, Queen Street, Edinburgh, on Tuesday, August 2. The President will deliver an address on Canada, with limelight illustrations. The reports of the judges on the several essays sent in for competition will be announced. The annual excursion will be held from August 3 to 5 inclusive, in the Forest of Dean. It is estimated that the total cost per member will be £4 6s. 4d. Communications should be addressed to the Secretary, Mr. ROBERT GALLOWAY, 5, St. Andrew Square, Edinburgh.

COLD STORAGE PÆONIES.—The *Weekly Florists' Review* gives an illustration of a compartment in a Chicago cold storage warehouse, where the KLEHM BROS. store their Pæonies in cold storage. The blooms are cut when in the bud, but not till the top petals start to separate, making what is called "the split." The buds are then wrapped up in bundles of fourteen each, to make a generous dozen, and placed in buckets about half full of water in the cold storage room, which is maintained at about the freezing point. The water is not changed, and will remain sweet as long as the flowers are kept there. The paper is placed around the buds only, and not around the lower stems, and different coloured paper is used to designate the different varieties they contain, which is preferable to labelling the bundles. The paper is to keep the buds from being touched by frost. Care is taken to never wet the blooms. In this way a number of varieties may be held from six to eight weeks, and come out apparently as fresh as when put in. When taken out for use a little piece is cut off the end of the stems and the buds placed in water, when they open gradually. If the bud is cut a little too tight, when it does open it will pop wide open and drop. And not all varieties will respond to the cold storage treatment. The white sorts seem to be the best keepers, though the fine sort known here as "Drop White," is one of the poor keepers. The early sort known here as "Old Red" will not keep at all in cold storage, while the common pink sort will keep only ten days or two weeks.

PROFESSOR SURINGAR.—We regret to hear from one of our Dutch correspondents of the sudden death, in his laboratory, of Professor SURINGAR, the Director of the famous Garden and Herbarium of the University of Leyden. Professor SURINGAR was born at Leeuwarden, December 28, 1832, and was appointed to Leyden in 1857, in succession to MIQUEL. His work was varied, but much of his attention was devoted to the Algæ. Professor SURINGAR was a frequent visitor at botanical and horticultural congresses, and the last time we saw him was at the last Ghent Quinquennial in April last. He was an occasional contributor to these columns, and we had sometimes to refer to him for information, which was always freely and pleasantly accorded.

THE PLANTS OF LEWIS AND CLARK'S EXPEDITION ACROSS THE [AMERICAN] CONTINENT IN 1803-6.—In July, 1803, Capt. LEWIS started from Washington with a party across the Continent to the Pacific Coast. The task was clearly no mere holiday trip, as the country and its resources were then entirely unknown. LEWIS and his associates were instructed among other things to note the food plants of the Indians, and the dates at which particular plants put forth flowers and leaves. What became of the collection has never definitely been ascertained till this time, but some of the material found its way into Lambert's herbarium, and after the dispersal of that collection some of the plants found their way to the Academy of Natural Sciences of Philadelphia. These plants have been determined

by Prof. ROBINSON, of the Gray herbarium, and Mr. GREENMAN. The results of this examination, so interesting to American botanists, are given by Mr. MEEHAN in the *Proceedings of the Academy of Natural Science, Philadelphia*.

CRICKET MATCH AT SYON HOUSE.—The *Gardeners' Chronicle* staff and friends engaged on the afternoon of Saturday, 16th inst., in a friendly match with the Syon House Cricket Club, the wickets being pitched in the vicinity of the gardens and the high road, an ideal spot for such a purpose. The home team won the toss, and elected to go in first. Their innings, added to by 16 byes, amounted to 70, the highest score being that of Mr. STROUD, with 26. The *Gardeners' Chronicle* men then went to the wickets, and by the end of the game had made a score of 133, of which only 2 were byes, pointing to the better fielding of their opponents. The highest score of this team was made by Mr. GRIFFIN—95, who went in first, and almost succeeded in carrying out his bat. It is intended to play the return match early in September.

SELF-FERTILISATION.—M. C. GERBER contributes to the *Comptes Rendus* for June 13, a paper on self-fertilisation in certain plants whose flowers, at first sight, seem adapted for cross-fertilisation. Taking the genus *Cistus* as an instance, he mentions how, by the conspicuous habit and colour of the flowers, they seem specially adapted for attracting insects, although in reality they are self-fertilised. The process by which this is effected is the peculiar action of the calyx, explained by M. GERBER in the following summary of his experiments:—"1. *Cistus* have a calyx which tends, owing to its peculiar structure, to remain pressed against the ovary, compelled, when the flower opens, to separate itself owing to the turgescence of the base of the corolla; it quickly closes, mechanically, like an elastic plate, which resumes its state of equilibrium, as soon as this turgescence diminishes. In so doing it throws off the petals in regular sequence. 2. The calyx is composed of three portions only; the two green external folioles should be considered, according to WILLKOMM, and contrary to the opinion of LINNÆUS, LAMARCK, DE CANDOLLE, SPACH, PAYER, PLANCHON, BAILLON, &c, as bracts corresponding to two little bracts which accompany the three sepals in most *Helianthemums*. They constitute a uniform involucre comparable to the involucre of *Anemone Hepatica*. 3. Owing to the pressure which the calyx exerts, in closing on the stamens, self-fertilisation is assured, even in the case where foreign pollination could be effected during the relatively short time that the flower remains open. Also, it may be said that the chasmogamous flowers of *Cistus* obey merely apparently and by habit the law of dichogamy, and that they become true cleistogamic flowers after the closing of the calyx. 4. Therefore the size, beauty, colour, and attractiveness of flowers do not always furnish proofs of the adaptation of the plants to insect pollination. This conclusion confirms the experiments of M. G. BONNIER and the observation of M. PLATEAU, that neither the form nor the bright colour of flowers appear to play any important part in attracting insects."

PLANT DISEASES.—The browning of the Vine, which was treated with so much humour by Mr. BLACKMORE at one of the meetings at Chiswick, is now ascertained to be caused by a slime fungus. More recent researches show that it is by no means confined to the Vine, but that it is met with in Beet-roots, Potatos, Melons, Cucumbers, Artichokes, Laurel-Cherries, Aucub, Cherries, Apricots, and Plums. The *Pseudocommis*—for such is the name of the slime-fungus or Myxomycete, determines the gumming, the fungus known as *Coryneum* being now excupulated. In addition to the plants mentioned, Apples, Pears, Chestnuts, Poplars, and Sugar-cane are mentioned by Mr. ROZE as subject to this terrible scourge. In many cases the disease has been attributed to other fungi. The existence of the other fungi is not denied, but it is supposed that instead of being directly injurious, they merely feed on the

tissues decayed and injured by the presence of the myxomycete. These are questions which must be settled as soon as possible in the botanical laboratory. The present state of uncertainty is worse than embarrassing to the practitioner. Inoculation of a previously healthy plant with spores of the several fungi was considered as sufficient proof of the malignity of that particular fungus, but the slime-fungus can as easily be introduced, and the evidence is as strong in the one case as in the other.

THE JOURNAL OF THE SCOTTISH METEOROLOGICAL SOCIETY, just issued, contains a very valuable paper on the mean atmospheric pressure and temperature of the British Islands, by Dr. BUCHAN. It is illustrated by charts and diagrams. It is, in reality, a revision of the observations made during forty years, from January, 1856 to December, 1895. The beneficial effect of the relatively warm Atlantic is shown very strikingly by the statement that were it not for the prevalence of W.S.W. winds, the mean temperature of London in the middle of winter would be 22°; of Edinburgh, 12.5°, and of Shetland, 7.5°. Various other records attest the industry of the observers and computers, and prove the great value of a publication, the formidable figures of which have at first a repellent look.

PUBLICATIONS RECEIVED.—*Dictionnaire Pratique d'Horticulture et de Jardinage*, livraison 72, to U. L. M. U.—*Nature Notes*, July.—*Insects: Foes and Friends*, by W. E. Kirby, M.D., with preface by W. F. Kirby (Partridge & Co., Paternoster Row). A dainty-looking book, small enough for the pocket, and with coloured illustrations.—*Journal of the Royal Horticultural Society*, July. This contains, among other articles, papers on "Orchids in Guiana," by Mr. Everard F. im Thurn; "Cooking Vegetables," by Dr. Bonavia; "Horticultural Soils," by Mr. J. J. Willis; "Trees and Shrubs in the Isle of Wight," by Mr. S. Heaton.—*Observations on the Flowers, Fruit, and Seedlings of Saintpaulia ionantha*, Wend., by Dr. John H. Wilson. This paper is written in Flemish and English in parallel pages.—*Residential Sites and Environments, their Conveniences, Gardens, Parks, Planting, &c.*, by Jos. Forsyth Johnson (New York: A. T. Delamare Printing and Publishing Co.). A handsome volume, liberally illustrated, and which will receive further note when space permits.—*Vegetation and Scenery in the Metropolitan Reservations of Boston*. Forestry Report, by Ch. Eliot, presented February 15, 1897 (Lamson, Wolfe & Co., Boston, New York, and London). An interesting and illustrated report, to be mentioned more fully at a later date.—*The Botanical Gazette*, June (Chicago, Ill.), contains articles on the Vegetation Regions of the Prairie Province, by Roscoe Pound and F. E. Clements; Nutation of *Helianthus annuus*, by John H. Schaffner; Mode of Dissemination and on the Reticulations of *Ramalina reticulata*, by J. G. Peirce; Life-History of *Euphorbia corollata*, by Florence May Lyon; Size of Evergreen Needles, by Edwin Bingham Copeland; Reasons why the Rochester Nomenclature cannot be regarded as a Consistent or Stable System, by B. L. Robinson.—*Some Interesting Soil Problems*, by Milton Whitney (Reprint from Yearbook of U.S.A. Department of Agriculture for 1897).—*Partial Report of Work of the Agricultural Experiment Stations of the University of California*, for the years 1895-96, 1896-97 (University Press, Berkeley). This volume includes the notes of the work done at the several experiment stations during the time mentioned, also of that accomplished in the agricultural laboratories. Entomology and Plant Diseases, and Miscellaneous Memoranda occupy two more sections. Report on Culture-work at the Central Experiment Station and Sub-stations takes up another. We also note a paper on the "Olive Knot," by F. T. Bioletti.—*Additions to the Fungi on the Vine in Australia*, by D. McAlpine, assisted by Gerald H. Robinson (Department of Agriculture, Victoria). A valuable report on various (1) parasites, and (2) saprophytes, clearly and delicately illustrated.—*Die Natürlichen Pflanzenfamilien*, 175 und 176 part.—*Congrès Horticole de 1898, Procès-verbal de la Séance* (Paris: 84, Rue de Grenelle).—

Phytophthora infestans De Bary, et de la Pourriture des Pommes de Terre, par M. E. Roze; also *Un Nouveau Type Générique des Schizomycètes*, par M. E. Roze (*Extraits du Bulletin de la Société Mycologique de France*).—*Parasites Végétaux que attaquent les Rosacées utilisées en Horticulture*, par M. E. Roze.—*Journal de la Société Nationale d'Horticulture de France*, June, including papers on "Ornithogalum pyrenaicum comme plante Comestible," by M. P. Hariot; "Inauguration du Monument Hardy," by M. Viger; and various reports and notes.—*Tijdschrift voor Tuinbouw*, elfde en twaalfde Aflevering.

PLANT PORTRAITS.

ACALYPHA SANDERII, N. E. Brown, *Le Jardin*, June 20.—The first coloured plate of a species which was first described and illustrated in our own columns.

ALBERTA MAGNA, *Garden*, May 21, 1898.

APPLE "FLORA."—A large rounded conic Apple, red, streaked on the sunny side, *Bulletin d'Arboriculture, &c.*, June.

BRYOPHYLLUM CALYCINUM, *Revue de l'Horticulture Belge*, June.

FEIJOA SELLOWIANA, Berg. (Myrtaceæ), *Revue Horticole*, June 1.

GESNERA LEOPOLDI, *Garden*, June 25.

IRIS ALCMENE.—A cross between I. Swerti and I. paradoxa, *Revue de l'Horticulture Belge*.

IRIS CUPREA, I. TENAX, *Garden*, June 18.

KNIPHOFIA LONGICOLLIS, *Garden*, June 11.

PEAR EVA BALTET.—A cross between Williams' Bon Chrétien and Fondante de Bois, *Revue Horticole*, July.

ROSE CAPTAIN CHRISTY, variegated, *Le Jardin*, June 5.

ROSE CHARLOTTE GILLEMOT T., *Le Moniteur d'Horticulture*, July.

ROSE PANACHÉE DE BORDEAUX, *Revue Horticole*, June 16.—A H.-P., with the petals white, margined with rose-colour.

ROSE SOUVENIR DE MADAME EUGÉNIE VERDIER, creamy-yellow, *Rosenzeitung*, Mai.

RUBUS DELICIOSUS, Torrey, *Gartenflora*, t. 1451.

TEUCRIUM CANADENSE, Linn., *Mehans' Monthly*, July, 1898.

TULIP, SINGLE EARLY, "La Laitière," milky-white, *Revue de l'Horticulture Belge*, June.

TULIPA KAUFMANNIANA, *Garden*, July 9, 1898.

VEGETABLES.

THE ROUNCEVAL PEA.

ONE of the oldest types of Pea is probably that known to our forefathers as the Rounceval, of which there were three or four varieties. Mr. N. N. Sherwood, in his paper on "Edible Peas," at the last meeting of the Royal Horticultural Society, alluded to the Rounceval Pea as having been grown in this country in the time of Queen Mary. The earliest seed catalogue in my possession, 1817, includes two varieties of the Rounceval Pea—the white and the green. George Lindley in his *Orchard and Kitchen-garden*, 1831, gives the white Rounceval in his list of twenty-six varieties. A catalogue issued by James Carter, 238, High Holborn, in 1842, one in remarkable contrast to the elaborate document issued in the present day by his successors, gives the white Rounceval, but ten years later it had entirely disappeared from leading catalogues, for by that time such varieties as Sangsters' No. 1, Champion of England, British Queen, and Ne plus Ultra, had come into cultivation. Peter Lawson & Son in their *Agriculturists' Manual* for 1836, describes the grey Rounceval Pea as "at once the tallest growing, the latest, and largest of our field Peas; height, 6 to 8 feet." This statement is confirmed by M. Henry de Vilmorin in the *Vegetable Garden*, who describes it as "the tallest growing and latest kind of field-Peas out, at the same time the most productive next to the Partridge Pea." This also refers to the grey variety.

I applied to M. Henry de Vilmorin for information as to the name of this Pea. He thinks the place of its origin to be England, where it appears to have been grown pretty extensively for a long time, and it was from this country it was introduced to the notice of Messrs. Vilmorin & Co. But M. de Vilmorin thinks the name Rounceval to be of "French origin, although no place or hamlet of any importance in France bears that name at present, the nearest we can find is Roncevaux. At all events Rounceval sounds like the mediæval name of a place or vale abounding

with brambles, and we should therefore be inclined to think that it is the name of a place, and not of an individual." R. D.

SNOWFLAKE CAULIFLOWERS FOR FORCING.

I have this year grown Messrs. Little & Ballantyne's little Snowflake Cauliflower, and can scarcely speak too highly of it as an early forcing variety. I sowed the seeds in the second week in February indoors, pricked out and potted the young plants, and transplanted them to the open. From these plants I was enabled to obtain some fine heads in the last week of the month of May. The Cauliflower plants were afforded rich soil, and a warm border, but no protection whatever. Some of the heads measured from 16 to 18 inches, and one was 20 inches in circumference; a fine variety for early work in the south. A. Smith, *Eden Hall Gardens, Langwathby*.

MARLEY HALL, EXMOUTH.

(Concluded from p. 55.)

PASSING from the range of vineries, we entered a greenhouse, 60 feet long and 16 feet wide, filled with Malmaison Carnations, Cinerarias, zonal and show Pelargoniums, Petunias, and Gladiolus Colvillei alba, mostly grown for decoration. Marguerites are grown in large numbers, as also Richardias; these last are, as regards some of the stock of plants, planted in the kitchen-garden borders. The Pine-stoves form a range that measures 100 feet long, in three divisions. The first is at the present time devoted to Melon-growing, and to rooting Pine-apple suckers; the second is filled with succession Pines, and the third to fruiters, of which at the time of my visit I noticed no less than forty in various stages of development, mostly Queens; although some Smooth Cayennes and Rothschilds were remarked. The weight of the fruits ranges from 5 lb. to 6 lb., and the whole of them are consumed by the family, or given as presents by the generous proprietor. Fine Stephanotis, Dipladenia boliviensis, Passiflora alata, &c., are grown on wires over the path in these Pine-stoves, the Passiflora bringing a number of its luscious fruits to perfection.

Immediately in front of this range, on a narrow border, was noted a row of Chelsea Gem Pea, just coming into bearing, and as soon as these are finished a row of Tomatos will be planted, and grand crops of fruits will doubtless be gathered from them. The Exonian Pea was vigorous and strong; and here, too, I noticed a good dressing of long litter under one bush fruit—a wise and helpful mulching.

The second garden is bisected by a broad walk, and here on either hand are annuals and herbaceous and bedding-plants in abundance. A good portion of one wall is covered with a range of Peach-houses, about 170 feet long, and divided into four unequal divisions, one being also a Rose-house. In this one Maréchal Niel and Catherine Mermet Roses have done wonderfully well, bringing large flowers, and of most perfect form. Citrons on the back wall of this house are almost always carrying fruit of large size, although not of a very useful character.

The Peach-trees in the three divisions are in various stages, a trellis on the front rounded over so as not to monopolise all the light, allows good trees to be grown on the back wall, and these are fastened to wires running the whole length of the divisions. Perfect in shape, vigorous in foliage, with capital crops on almost every tree, afford testimony to good culture. A fine lot of pot Strawberries are grown, mostly Royal Sovereign and President, and as the first dish was sent in of the former on March 1, it will be seen that these are well looked after.

Cucumber and Melon houses, with divisions devoted to Tomatos, Pancratiums, and a few Orchids, among which Peristeria elata in several specimens were noted. A large quantity of plants for house decoration, besides the usual run of plants for bedding-out purposes, will give some idea of the extent and variety of the operations carried out. Gloxinias and Begonias in frames alone formed a feature, and in fact, every available space was noted as being filled

with plants for early or late uses. I cannot conclude my notes without a word of praise for the cleanliness, order, and method shown everywhere, the freshness and neatness of the lawns, paths, and borders; not forgetting a word of thanks for the kindness and attention shown to me by the excellent gardener, Mr. Baird. *W. Swan, Exmouth.*

THE DANE PARK, MARGATE.

WITHIN the last few years several important public events in connection with the town of Margate have demanded public recognition and celebration, but it is safe to say that no more important event in the history of the borough has been recorded than that which was celebrated on Wednesday, June 1, 1898, with all the dignity and official display at the command of the town, the Lord Mayor of London, Col. H. D. Davies, performing the opening ceremony.

of presenting it to the borough to be for ever a public park and recreation-ground. Mr. Woodward having succeeded in his object, and secured about 33 acres at great expense, in February, 1896, addressed a letter to the Town Council, offering to hand over the whole of it to the town for the purposes in view. He expressed the hope that the ground-rents or purchase money of certain parts of the estate would be sufficient to lay out the sixteen acres to be reserved for a park. He stipulated that all the roads of the estate should be 50 feet wide, and that the work should be completed within twelve months of the following Michaelmas, when the tenant would give up possession.

The Town Council during the first year went as far as circumstances would permit in their arrangements for converting the land into a public park, but the bulk of the work of preparation has fallen within the last eighteen months. Messrs. J. Cheal & Sons, the

old trees. The old farmhouse which stood near has been taken down, and the whole surroundings are decidedly pretty. The natural slope of the ground inclines towards the water, and at the back is an embankment forming the roadway beyond. There is a miniature island in the lake, and bold rockwork, in the crevices of which have been planted flowering plants and shrubs, forms an excellent background for the lake. A summer-house and retreat on the raised bank at the end commands a view of the water, and a finish is given to the whole by a rustic bridge, beds of flowering plants, and the pavilion and band-stand in the distance.

Near the main gates a caretaker's lodge has been erected. The greater portion of the southern slope, however, is intended to be retained as grass, with open groups and clumps of trees to afford shade, whilst a few single trees are or will be planted in the western portion of the grounds. A new road has



FIG. 19.—A VIEW IN THE NEW TOWN PARK, MARGATE.

Anything that is calculated to increase the attractions of Margate as a watering place, or enhance the reputation of the town as a health resort, deserves the heartiest support of the inhabitants. The acquisition of such a valuable property as the Dane Park for the use of the public in perpetuity promises to do both these things. Desirably situated, sheltered from the winds, well covered in parts with trees, and not lacking that which is picturesque and attractive in nature, the new Park must certainly prove an attraction.

It may be as well to state in what manner the Dane came into the possession of the town. About three years ago certain farm-lands situate in the Dane Valley, known as Dane Farm, came into the market. It was offered for sale by the owners in several lots, but at the auction sale it was not all disposed of, and it appears to have then occurred to Mr. John Woodward, a native of the town, and who is now residing in retirement at Croydon, to acquire a portion of the property with the object

well-known nurserymen of Crawley, Sussex, were entrusted with the preparation of a design which was submitted to and received the approval of Mr. Woodward.

The western end of the estate, that part which had formed the immediate surroundings of the farm-buildings, best lent itself to picturesque treatment on account of the undulating nature of the ground, and the number of existing trees. But whilst much attention has been paid to effect and the picturesque, at the same time care has been taken to blend the lovely grounds of Dane Park in the general design, and make its natural features as useful as possible. It was, therefore, decided that this corner of the park should be retained as the more select, and that arrangements should be made for cricket and other forms of recreation in the open part of the estate. On entering the grounds, the visitor is immediately attracted to the neighbourhood of the lake (see fig. 19), a small but very picturesque piece of water, shaded on one side by fine

been formed, completely circling the Park, and as only a light open fence is erected between, the road commands good views over the whole of the area. No other carriage-drive is under these circumstances necessary, but a wide walk leads all round the grounds, which will be suitable for bath-chairs, and there are also numerous side-walks giving access to the various objects of interest and best views on the ground.

HOME CORRESPONDENCE.

GARDENING CHARITIES AND SELF-HELP.—Mr. Thos. Fletcher is quite right in saying that the best charity of all is to help people to help themselves, and if this were thoroughly done, there would be less need for the Royal Benevolent Institution. But where is the benefit of preaching this sound truism to those in sore trouble and distress? These could not or did not provide for a rainy day. Are they and their wives and children to be left to starve when age, and want, and fraud, that ill assorted trio,

make many deserving sufferers mourn? How many widows' and orphans' portions and old-age pensions for gardeners did Jabez Balfour squander? The industrious poor are always with us, notwithstanding all our scrapings and savings. By all means save as we may through Friendly Societies or otherwise. Through loss of health, wife, or children, situations, savings or investments, poverty often comes in at the door of the most deserving, and self-help fails when it is most needed. But why should Mr. Fletcher or others pit these one against the other? Five shillings a week for an orphan bairn, £18 for a widow, £20 a year for a man, are by no means too liberal allowances, far less a fortune, though a blessed barrier between sudden or inevitable misfortune and starvation, or a pauper's doom in the workhouse. In no other walk of life that I am aware of have friendly societies removed the needs for the demands for benevolence; and as for the charges of extravagant management, they are wholly without foundation, so far as the garden charities are concerned. All candidates have to run through rather severe ordeals before election as pensioners. They have to run the gauntlet of a contested or competitive election, and satisfy the committee of their need. It has frequently been said and thought by many that the standard of poverty for qualification for a pension has been pitched too low. Through an intimate intercourse with gardeners and their patrons for more than fifty years, I have never heard anyone say that the pecuniary standard for election had been pitched too high; but I differ yet more widely from Mr. Fletcher in his other two propositions, which are to the following effect: the first is his own assertion—that a subscriber to the Gardeners' Benevolent Institution is sure of nothing except a vote; the second flatly contradicts Mr. Monro's perfectly true statement, that each subscriber may be either elected a pensioner or receive benefit. As to Mr. Fletcher's first assertion, it is a mere truism, and equally applicable to all other benevolent institutions, as of any of our garden charities. How can Mr. Fletcher or any other subscriber be sure of more than a vote until he has satisfied the committee of his need of more—that is, of a money-grant—to help him through his age, suffering, or poverty. But is the vote then worth nothing? On the contrary, it is worth infinitely more than a pension to most gardeners. Votes enable all of us to help our brothers and sisters and their orphans in their times of deepest trouble, and thus help us to bear one another's burdens and so lighten our own. I have spent a good deal of time and used many postage stamps over these votes, and reckon them among my most happy and fortunate investments from a rather limited income. In this nobler sense, too, Mr. Monro's statement is literally true. Each subscriber is either elected a pensioner or derives some immediate benefit. Has Mr. Fletcher not read in the Old Book that it is more blessed to give than to receive. There is no need to relinquish reliance on self-help. It is the earnest hope and desire of the majority of the subscribers to the gardeners' charities, that they and others may never need the pay or pensions. What then? This. Even self-help sinks to a lower level of charity than the help of others more needy than ourselves. Assisting others in this spirit we may, should hard fate or necessity lay that burden upon us, accept the help of others without sacrificing our self-respect or manly independence. This much is certain for us all: our contributions will have lightened by many feather's weight the burdens and the sorrows of our brothers and sisters of the craft. I cannot conclude without thanking our liberal patrons in society, the trades, the Press, and all who have so generously contributed to our Societies, hoping for nothing in return. May I heartily assure all such of the deep gratitude of gardeners. As a rule only the few grumblers are heard—the numerous grateful gardeners are silent. Would that this year a thousand more gardeners would join our charities, and help us all the more and better to help one another and ourselves, as well as give a cheerful stimulus to our richer patrons. *An Original Subscriber.*

—I must confess I am rather surprised at Mr. Thos. Fletcher's evasive letter in your last issue, but I cannot consent to let the matter "stand in abeyance" as he suggests. He wrote to me direct last week, and in reply I offered to leave the decision to Dr. Masters, or to anyone he thought fit to appoint, providing they understood the working of the Institution, but as he appears afraid to submit to this I have no alternative but to leave it to your readers, "the subscribing gardeners to the Gardeners' Royal Benevolent Institution," to

say whether Mr. Fletcher or I must pay the £20—the matter cannot be shelved in the way he suggests. The case in a few words is this: Mr. Fletcher asserted that subscribers were sure of nothing but votes. I answered that all applicants who were subscribers, and passed by the Committee as necessitous, and eligible according to the rules, were either elected, or derived benefit from the "Victorian Era Fund," according to the number of years they had subscribed. Mr. Fletcher then said if I could get this officially confirmed he would pay £20 to the Treasurer. I proceeded to do this, and before seeing Mr. Ingram's reply offered to pay the £20 if I had overstated the case. It is for your readers to judge who is to pay the amount, and I leave myself in their hands. *Geo. Monro.*

—Far be it from me to throw even the smallest stone at our present gardening societies. Each is good, even if some persons may detect weak points in them. The older Royal Gardeners' Benevolent Institution can well protect itself, and the aims of the Orphan Fund speak for it. Admit freely that the gardening fraternity, do not support these charities as they ought, and of course the difficulty is to induce individual gardeners to make a beginning; and the body of gardeners leave it to the general public, which is all very well in its way; yet, methinks the conscience of the gardeners should induce greater generosity on their part. I prefer to deal more particularly with the Royal Gardeners' Orphan Fund; and I would ask if there is one young gardener in ten who is a supporter? I hear it said, "Of what use is it to me as a single man?"—which is true to a certain degree; but the gardener's thought should go further than that. Many gardeners will know of deserving cases which have been brought under their notice; and, then, surely the question has arisen, who shall be the helper. For 5s. yearly every man is in a position not only to help the Orphan Fund, but to show his practical sympathy by voting for deserving cases. Want of thought and indolence are, I fear, the causes of this Society not being so freely supported as it should be, it being with some too much trouble to send a postal-order once a year. In regard to these most deserving and useful charities, each man should subscribe what he is able to afford without thought of his own personal needs or future benefit, but rather on the broad principle of benevolence to his class. Now, however, that I am writing, I should like to be the means of introducing to my brethren of the craft, and the trade in general, a Society not worked on charity lines, but on sound business principles, viz., The National Deposit Friendly Society, which, while providing sick-pay and medical attendance, and an old-age pension, it has a funeral-fund; and what is better, it has also a provision for banking money. Thus, a member if only paying his ordinary yearly contribution, at the end of each financial year, in the event of the member making no claim on the funds of the Society, after providing for management, funeral fund, and old age pension, has about half of his money placed to his credit as a deposit. Then a noteworthy feature of this society is, that a member can make himself a full benefit member at once by paying down this year's contribution in one sum. A member by paying 2s. per month is entitled to sick pay of 2s. per day, with free medical attendance and medicine. Should the member be married, his wife also can be in the club on very advantageous terms. The N. D. F. S. is thirty years old, with a very substantial balance, and it is a society that only requires to be known among gardeners to be highly appreciated. Another feature of this Society is, that no meetings are permitted to be held on licensed premises. I should be most happy to afford any enquiries and fuller details on application. *Stephen Castle, Bottesford Vineyards, Notts.*

AWARDS OF THE FLORAL COMMITTEE.—Surely there was a remarkable lack of appreciation of excellent culture on the part of the Floral Committee in making the inadequate award of a Vote of Thanks to the examples of *Phoenocoma prolifera* Barnesii, shown by Messrs. W. Balchin & Sons, of the Hassocks Nursery, at one of the last meetings of the Royal Horticultural Society. Whoever before had seen such heads of bloom so richly coloured on plants in 7-inch pots, the flowers highly coloured, and feathered with foliage to the very pots. These plants were five years old, and had been brought a considerable distance. It should be stated that it was only a small minority of the Floral Committee who so lamentably failed to appreciate high cultural skill. Had they been specimens of the common annual *Helichrysum* they could not have

received a less award. An occurrence of this kind is all the more regrettable, because one frequently finds the remark being made in the provinces that exhibits from a distance do not find so much favour as those contributed by London firms, however good they may be. That the conspicuous failure of justice on this occasion lends a semblance of truth to such a remark cannot be denied. I am simply voicing the opinion of many present who possess a good knowledge of hardwooded plants, when I express keen regret at this lamentable lack of appreciation of undoubted high quality. *A Fellow.*

RISE PARK, NEAR HULL.—Far away in the East Riding of Yorkshire stands the above old home of the Bethells, and a recent visit there showed that a house and gardens which have existed for some generations are still well kept up. Most interesting was the display of Roses made by some young dwarfs planted last autumn in beds of one variety each, a very effective mode of planting Roses. Among these beds, the following varieties were especially fine:—Duke of Edinburgh, Ulrich Brunner, Madame Van Houtte, and Countess of Folkestone, proving that these show varieties are of great use out-of-doors. The beds were arranged so as to converge towards a very lightly-built bower, which is made of light iron, and round which are planted all the best varieties of climbing Roses; the effect here in a few years' time will be charming. On the right of the entrance to the mansion was noticed an almost-perfection specimen of the English Yew, about 30 feet high, and covering a large area. The flower-garden, which is very artistically arranged, was already showing want of rain. In the kitchen garden some grand plots of Royal Sovereign Strawberry were pointed out, some very fine fruit pulled off the beds that morning being shown me by Mr. Allsopp, the head-gardener. Carnations are great favourites with Mrs. Bethell, and they are well done. It was cheering to see some nice beds of them, as this year in many cases they are almost a failure. The same method of keeping the varieties separate is pursued as with roses, and an especially fine bed of Mrs. Reynolds Hole among others was noticed. Under glass the chief attention is devoted to fruit-culture, and excellent crops of succession Peaches and Grapes are there seen. Although somewhat out of the way, a visit would at this time well repay anyone, as the park, which is a very extensive one, is well stocked with deer. *John Clayton.*

LACHENALIAS AND OTHER PLANTS.—The interesting notes by "R. D." in issue of the *Gardeners' Chronicle* of July 16, p. 47, induce me to refer to an old and charming species I have now in flower in the Cambridge Botanic Garden. This is *L. purpureo-coerulea*, which, unlike the kinds usually grown, has long exserted stamens. The general effect of colour is rosy-lilac; there are about three dozen or forty flowers to each scape, and they have a slight perfume. The perianth is only about one-quarter of an inch deep, and the stamens are exserted to the same extent. Each segment, when quite young, is tipped with green, and this soon turns to rosy-lilac. The scapes are about 8 inches high, mottled below, and the flowers occupy a space of about 3½ inches. The leaves are about 7 inches long, and less than three-quarters wide; they are slightly warty, after the manner of *L. pustulata*. With this in flower I have *L. aurea gigantea*, which appears to justify its additional name. Lovers of Cape bulbs may be interested to know that *Hesperantha falcata*, and *Tritonia seillaris*, are also in flower in the same group; while several other interesting things have just gone out of bloom. *R. I. Lynch.*

FRUIT CROPS IN THE BLAIRGOWRIE DISTRICT.—The *Scotsman* of Monday, July 18, 1898, says, in consequence of the scorching weather of the past week, fruit has ripened rapidly. The demand for Strawberries from the English market has been very brisk during the last few days, and several lots have changed hands at £28 per ton. There appeared to be every prospect of prices rising still further. The same applies to Raspberries, which are in good request at £37 per ton. For Black Currants about £40 per ton has been offered. When lecturing here last year, I was struck with the superior culture given to Raspberries and Black Currants. But for the fear of the Black Currant-mite, few, if any, of which were seen in the neighbourhood, Black Currants were found to be the best paying crop. There seemed, however, room for a large extension of Gooseberries and Red Currants; while it seems singular to pay £28 per ton for Strawberries in bulk for jam from the South that might be grown as well or better on the spot. *D. T. F.*

COLD VERSUS COOL STORAGE.—I entirely dissent from the claims made by your correspondent on behalf of the "fan cooler" in fruit ships. Surely it is bad enough for the Australasian fruit-growers to lose thousands of pounds by this useless process, as they did by the ruin of the fruit on the *s.s. Gulf of Bothnia*, without having its praises sung by parties unaffected by the loss. The fan-cooler process is a complete failure so far as fruit is concerned, and this will be verified by an appeal to the Colonial agents in London, who superintended the unshipment of the rotten Apples. In the same ship the fruit brought over by cold storage was perfect, and realised high prices. Parties interested in the use of "fan-coolers" should bear this in mind. *Market.*

STRAWBERRY MONARCH.—Blindness appears to be this season characteristic of the flowers of this variety. Two years ago I procured some plants which bore fruit last year, and in order to give it a fair trial I layered a number of the runners into small pots as soon as I could obtain them, and these were planted out in the month of August on a well-prepared border. The plants grew without a check, and, judging by appearances, I expected this season to be rewarded with a good crop of fruit. Such was not, however, the case, for not only was every plant blind, but also all the plants of my old stock. After reading in your last issue ("Strawberries at Maidstone") that there "20 per cent. of Monarch were blind (and the same thing occurred at Chiswick, but to a greater extent)," I am inclined to think that blindness is characteristic of the variety, or else we treat it too liberally, and it would be more productive in a poorer soil. The soil here is very heavy and moist, and Strawberries do remarkably well. I may add, from what I saw of Monarch last year, I do not consider it has anything to recommend it beyond its size. *H. Fisher, Flinton Hall Gardens, Bungay.* [Monarch may in great measure have reverted to the original Strawberry, which is delicious, as are the Hautbois. Why not try as a cure for blindness the planting of some other fertile variety coming into flower at the same season in alternate rows with Monarch? *Ed.*]

—In the autumn of 1896 I planted three beds in different parts of my ground, and two of them I allowed to bear fruit and runners in 1897, and the other bed I cut the blooms out as they appeared, on purpose to help the plant to make all the runners possible in 1897. The result this year is that the two beds that were allowed to bear fruit have had an excellent crop without any blind ones; the other bed that had the blooms taken out of the plants had a good number of blind plants. I would add, a few years back I treated an acre or two of Paxton's in the same way, by taking all the bloom off the first year, with the result when I looked for a grand crop the second year more than half were blind. I let them remain to see what they would do. The third, fourth, and fifth they were good, without any blind ones. My experience is that it is a mistake to take the blooms out, it upsets the balance of growth. *W. Horne, Cliffe.*

THE LILY FUNGUS.—I have found this disease to prevail widely in the county of Surrey, the leaves in many places having been entirely destroyed. It is interesting to note that all the same the base or autumn leaves come up very strong, in spite of the disease, and seem to be very clean and healthy. The fungus doubtless hibernates in the bulbs or soil, and is active only in the early summer. A gardener told me that he found frequent shifting of his bulbs to be productive of good results. Why should not a sprinkling of Bordeaux Mixture on to the soil about the bulbs do good after the diseased stems have been cleared away and burned? Or perhaps most good would be done by a gentle spraying with the mixture about the plants just as the flower-stems are starting into growth. With our knowledge of the potent effects of Bordeaux Mixture as a fungoid destroyer, why is it not more widely used? *A. Dean.*

DWARF SWEET PEAS.—These plants commend themselves to all lovers of sweet-scented flowers. The few notes sent are for the benefit of those of your readers who are not acquainted with the value of the above, grown in pots for decorative purposes. The variety grown here—Pink Cupid—is well adapted for pot culture. Sow the seeds in 6-inch pots, half-filled with fairly rich compost, four seeds in each pot. When six inches high, fill the pots to within an inch of the rim, pressing firmly, but carefully. Put a few neat Beech or Birch, fan-shaped twigs (not more than 18 inches high) in each pot. The plants will soon entwine themselves, and when

in full bloom, afford fine plants for greenhouse and conservatory decoration. *Henry Clayton, Blackley.*

GREEN-PODDED PEAS.—Mr. Sherwood, in his admirable paper on Peas, read at the Drill Hall on the 12th, mentioned that those varieties having green pods and Peas were by far the most popular. That is so very manifest now at every exhibition where colour is so prominent a requirement. If raisers of new Peas will recognise this fact, it will help them in their selections, and keep many varieties that are pale green out of the market. Such varieties as Sutton's Peerless, Sharpe's Queen, and the taller and fine Alderman, all make rich-coloured show Peas, and fill well also. There should also be more respect shown for good openers, the bloated pods of the Duke of Albany, Telephone, or similar types, seldom open well; they break or squash-in under the pressure of the thumb when sought to be opened. A Pea-pod that under such pressure opens the shells freely, and is then found to contain from nine to eleven not large but deep green, sweet, soft Peas, is practically one of perfect form and fitness. *A. D.*

DICKSON'S JUNE KING v. DIXON'S MIDSUMMER BROCCOLIS.—I do not know "Dixon's Midsummer Broccoli," mentioned by "H. J. C., Grimston, Tadcaster," in your issue for July 9, but I do not think that it can be in any way synonymous with "Dickson's June King." According to "H. J. C.'s" description of the former, viz., "This Broccoli has, to me, the desirable qualification that it is not over-large"—Dickson's June King, if left uncut for a sufficiently long period, will develop into a very large head; but for private gardens it is not desirable to do so. June King is exceedingly dwarf in habit, and therefore less liable to be injured by the winter frosts, no stem being visible above ground. It makes the most of its growth in the spring, and is the hardiest and latest of any Broccoli that I know, and I believe I have grown most of the leading varieties. I did not start cutting Broccoli June King this season until the first week in June (after I had finished cutting Late Queen, Model, and all other late varieties), and it supplied us with heads till the earliest Cauliflowers came in. As Mr. Burbury, on p. 8, says, "It is a variety that is sure to be extensively grown when better known." Indeed, it is a variety when once grown will be always grown. *James Campbell, Methley Park, Leeds.*

ASTRAGALUS ALPINUS ALBUS.—*Astragalus alpinus* is one of the rarest and most beautiful of Scottish alpine plants. Only two stations were known in Scotland where it was to be found previous to 1884—one at Little Craigendal, in Aberdeenshire, the other at the head of Glen Dole, Clova, in Forfarshire. A third station was discovered for this plant in 1884 by Mr. P. Neill Fraser, of Rockville, Murrayfield, who found it growing in abundance on Ben Vrackie, a mountain near Pitlochrie, in Perthshire, where it has probably been growing for centuries, judging from the present condition in which it is flourishing on this well-known mountain. At the end of June, 1896, I gathered and brought home a few plants of *Astragalus alpinus* from this station to grow in my garden. I selected a few clean patches entirely free from weeds. The plant was not in flower at the place they were gathered. Since then they have grown luxuriantly, but only came into flower a few weeks ago. I was surprised to find several plants bearing white flowers, intermixed with the typical pale blue form of *Astragalus alpinus*. They are now forming seed very freely. There is in cultivation a well-known white variety of *Astragalus hypoglottis*, but I cannot find any record of a white variety of *Astragalus alpinus* having been known previously. *Robert Lindsay, Kaimies Lodge, Murrayfield, Midlothian.*

SHIRLEY POPPIES.—In driving through some of the seed-growing districts lying between Great Bad-dow and Colchester, one frequently comes upon a breadth of Shirley Poppies standing for seed, and it is seen that the prevailing tint of colour is rose—from soft pink to deep rose. Seen at a distance of half a mile or so, there is a singular softness of hue, contrasting in a remarkable manner with the crimson of *Malope grandiflora*, and the dark crimson *Mignonette*. As Shirley Poppies often transplant badly, it is best to sow the seeds thinly, as thinly as possible, in drills where they are to blossom, and then they bloom most abundantly. The seeds are very small, and so it comes to pass in this case, as in that of other small-seeded annuals, there is a tendency to sow too thickly. But few appear to have the courage to thin-out plants to the extent that is desirable. *R. D.*

A VETERAN FLORIST.—I am still growing a few seedling Fuchsias, but did not sow the seed till March 1. I have nearly three dozen seedlings from *F. fulgens* looking like young giants, some showing bloom. The foliage of the same is very telling in its tints, and really one might designate these Fuchsias, foliage plants. *Fuchsia fulgens* was sent out in 1837, the year that I left my home. If the plant be well handled, it soon makes an object of beauty. Amongst my seedlings I should like to find a white-flowered variety, but I do not expect to succeed in my quest. *George Fry, Lewisham, S.E.*

A SEEDLING CARNATION.—I am sending you a few blooms of one of the seedlings raised from "Mrs. Leopold Rothschild." My object in doing so is not so much on account of any value I attach to its merits, but more for the interest I feel in Old-Lang-Syne. I have had to do with Carnations more or less since 1832, so that my interest in this popular and charming class is of long standing. The variety sent properly belongs to the tree or perpetual section. It is not devoid of fragrance, and has the all-important qualification of being a persistent non-burster. Numerous as the blooms have been produced, I have not seen one that has shown the slightest disposition to upset the calyx in its entirety. Commercially, I am not seeking or attaching any value of more than ordinary interest. We, in the year of grace 1898, abound in an endless variety of grand varieties of border and pot-plants, in fact, their importance as decorative subjects cannot be over estimated. My experience, as regards the raising of Carnations from seed, is one of intense pleasure, and it is marvellous what can be produced by judicious fertilisation of only a few of the best kinds, and the crossing of the choicest cardinal colours. I have been in my small way much surprised and intensely delighted in the issue of events in this mind-elevating occupation and pastime. My plants during manipulation are under glass, and it is quite the exception for me to see in the result of my labours a single flower produced. *Geo. Fry, F.R.H.S., Lewisham, S.E.* [A regularly-formed deep scarlet-coloured flower, with a fair amount of fragrance, excellent at any season. *Ed.*]

SOCIETIES.

MALDON HORTICULTURAL.

JULY 13.—This Society held its twenty-fourth annual exhibition of plants, cut flowers, fruit, and vegetables, in the grounds of Hill House, on the date given, and as regards the number and the quality of the exhibits—there were 450 entries in the open classes—was the best it has yet held.

Groups of pot-plants arranged for effect along the centre of one of the four large tents were extremely good in design and materials, and Messrs. Saltmarsh, Smee, and Pyman, took the prizes in the order of their names. The most successful exhibitors were Mr. S. Kerry, gr. to CHRISTOPHER W. PARKER, Esq., Hatfield Priory, Witham, who was the winner of thirteen 1st prizes; Mr. GEORGE PYMAN, Mr. SALTMARSH, Mr. THOROGOOD, and Messrs. REEVES, WILLSHER, and E. SMEE, who all showed well in the open and local classes.

Cut Flowers.—Mr. WILLSHER had the best twenty-four Roses, distinct, staging fresh, even blooms, of much substance, of leading varieties. Dr. J. H. SALTER had the best stand of twelve, and he was closely pressed by Dr. F. H. COOKE, who had the best stand of Teas. Mr. KERRY was 1st in a good class for twelve kinds of herbaceous plants, and which included some grand spikes of *Alstroemeria aurea* and other varieties.

Fruit.—Mr. KERRY was 1st for four kinds, staging good Black Hamburg and Muscat of Alexandria Grapes, Nectarines, Peaches, and grand fruits of Waterloo Strawberry.

Vegetables were extensively shown, and for the most part in fine condition, and Mr. KERRY was 1st for a collection of six kinds, namely, Pea Boston Unrivalled, Cauliflower The Pearl, Tomato Carter's Perfection, Carrot Model, Potato Ashleaf, and Turnips Six-weeks. *H. W. W.*

NATIONAL ROSE.

JULY 14.—The Northern provincial show of this Society was held on the above date in the gardens of Spring Hall, Halifax, by the kind permission of Clement Houldsworth, Esq., J.P., President of the Salterhebble and District Rose Society. Favoured with fine weather, and an abundance of excellent entries, the visit of the National Rose Society to the Salterhebble Rose Show was exceedingly fortunate, and the display was a grand one. The following were the chief prize-winners:—

NURSERYMEN.

For seventy-two blooms, distinct varieties, the winners were Messrs. HARKNESS & SON, 1st, with a very uniform lot of good blooms, including such favourites as Dr. Andry,

Charles Darwin, Captain Christy, &c. B. R. CANT, Colchester, was 2nd, and F. CANT, Colchester, 3rd.

For thirty-six distinct varieties, also in this class, three blooms of each, Messrs. HARKNESS & SON were again the 1st in a very keen competition, and their exhibition called for a general expression of admiration; ALEX. DICKSON & SON, Newtownards, 2nd; and B. R. CANT, Colchester, was 3rd.

In the class for thirty-six blooms, distinct, the 1st prize and Trophy Gold Medal was won by Messrs. HARKNESS & SON, of Bedale, whose very good collection included Ernest Metz, Catherine Mermet, Marie Verdier, Charles Darwin, Her Majesty, Maréchal Niel, White Lady, Madame Cusin, Duke of Edinburgh, Caroline Testout, Kaiserin Augusta Victoria, &c. The 2nd prize went to Messrs. B. R. CANT, Colchester; 3rd, F. CANT, Colchester, both exhibitors having especially meritorious stands.

In Division B, the best thirty-six blooms of distinct varieties were those shown by Messrs. J. TOWNSEND & SON, Worcester, being 1st with good examples of Prince Arthur, Reynolds Hole, and Horace Vernet; Messrs. J. BURRELL & CO., Cambridge were 2nd; Mr. HENRY NORTON, Louth, was 3rd.

In the same division was a class for eighteen distinct varieties in triplets, and here Messrs. TOWNSEND & SON were 1st, Messrs. S. COOLING & SON of Bath were 2nd, and Messrs. J. R. PEARSON & SONS, Chilwell, 3rd.

The Tea and Noisette section, open to nurserymen, the best eighteen blooms, distinct, were those sent by Mr. GEORGE PRINCE of Oxford, who showed grand blooms of good substance; Mr. B. R. CANT was 2nd; and Messrs. PAUL & SON, Cheshunt, 3rd.

For twelve distinct Teas or Noisettes.—1st, Mr. MATTOCK with a good box of choice varieties; 2nd, Messrs. BURRELL & CO., Cambridge.

Open to nurserymen and amateurs alike.—In these classes there was great competition, no greater number than twelve blooms being required.

For twelve new Roses, distinct, A. DICKSON & SONS, of Newtownards, was 1st, showing a grand lot, most of which, if not all, being of their own introduction, they included Mrs. Ed. Mawley, Ulster, Countess of Caledon, Mildred Grant, Ard Roon, Mrs. Conway Jones, Alice Graham, Lady Mizra Beauclerc, Duchess of Portland, Helen Keller, and Bessie Brown. 2nd, Messrs. F. CANT & CO., whose stand included good blooms of Mrs. Frank Cant, and Mrs. W. J. Grant.

For twelve blooms of any White Rose, Mr. GEO. PRINCE staged a lovely box of Kaiserin Augusta Victoria, which was awarded 1st prize. 2nd, Mr. B. R. CANT for Marchioness of Londonderry. In this class there was very keen competition, twelve lots being staged.

For twelve yellow Roses, Mr. GEO. PRINCE again took the highest honour with a charming dozen of Comtesse de Nadaillac. 2nd, Mr. J. MATTOCK, for the same variety.

For twelve blooms, any light-pink or rose-coloured Rose, Messrs. HARKNESS won with Mrs. Jno. Laing, a fine lot. 2nd, JAS. TOWNSEND & SON for the same variety.

For twelve blooms, light or dark crimson Rose, Messrs. J. TOWNSEND & SON were 1st with Gustave Piganeau. 2nd, B. R. CANT.

In the class for new seedling Roses great interest was centred, the result being the awarding of the Gold Medals to a lovely Tea Rose, Mrs. E. Mawley, exhibited by ALEX. DICKSON & SON, also to Mildred Grant, which was exhibited by the same firm.

Messrs. J. COCKER & SON received the same award for Mrs. James Cocker, a bloom having some resemblance to Mrs. John Laing.

In the Tea and Noisette section Messrs. A. DICKSON & SONS also exhibited sprays of a lovely single white Tea Rose, most distinct yellow stamens; this the Committee desired to see again.

Garden or Decorative Roses.—These were shown under the usual restrictions in bunches. The 1st prize for eighteen distinct varieties arranged in 6 feet space was taken by Messrs. PAUL & SON, of Cheshunt—a charming lot; H. V. MACHIN, Esq., being 2nd; G. COOLING & SON, Bath, 3rd.

In the class for a display of Roses arranged for effect, in a space not less than 6 feet by 3 feet, or 12 feet by 3 feet, Mr. GEO. PRINCE, of Oxford, staged a lot of grand blooms, including quite a number of Comtesse de Nadaillac, generally good this year; and Messrs. JAS. TOWNSEND & SON were 2nd. This class, we think, can be made most attractive, as was proved at the Newcastle show last week.

THE AMATEUR'S SECTION.

The Jubilee Trophy, which goes with the 1st prize, for twenty-four blooms distinct, was carried off by E. B. LINDSELL, Esq., Hitchin, who showed grand blooms of Madame Eugénie Verdier, Madame Cochet, Madame Haumann, Souvenir d'Elise Vardon, Suzanne-M. Rodocanachi, Alf. Colomb, Muriel Graham, Capt. Hayward, Earl of Dufferin, Innocente Pirola, A. K. Williams, Her Majesty, Beauty of Waltham, François Michelin, Ulrich Brunner, Marchioness of Londonderry, Gustave Piganeau, &c. The Rev. J. H. PEMBERTON, of Havering-atte-Bower, was 2nd with a twenty-four, which included superlative blooms of Lady Mary Fitzwilliam and S.-M. Rodocanachi. There were in this class six entries.

In a class open to amateurs, irrespective of the number of plants they grow, thirty-six blooms distinct, E. B. LINDSELL, Esq., was again 1st with a splendid even lot of blooms, including Marie Baumann, Earl of Dufferin, Madame de Watteville, The Bride, A. K. Williams, Merveille de Lyon, Gustave Piganeau, Marchioness of Londonderry, La France, Horace Vernet, Madame Hoste, Helen Keller, Madame de Cochet, &c.; H. V. MACHIN, Esq., Worksop, 2nd, with a stand that included a grand bloom of Mrs. W. J. Grant.

For eight distinct varieties, three blooms of each, E. B.

LINDSELL, Esq., again took the 1st prize, showing good Alf. Colomb, Her Majesty, Comtesse de Nadaillac, Ulrich Brunner, Mrs. John Laing, François Michelin, &c.; and Rev. J. H. PEMBERTON was 2nd.

For nine blooms of any Rose except Teas or Noisettes, H. V. MACHIN, Esq., 1st, with excellent blooms of Ulrich Brunner; E. B. LINDSELL, Esq., 2nd, with Her Majesty; Rev. J. H. PEMBERTON 3rd, with Mrs. John Laing.

For eighteen blooms, distinct varieties, OSMOND ORPEN, Esq., Colchester, 1st, he showing Mrs. W. J. Grant, Catherine Mermet among others, all good; SAM BERGEN, Esq., Knebworth, 2nd.

For twelve blooms, distinct, Mr. GEO. MOULES, of Hitchin, took 1st in a class of nine competitors; R. HOBBS, Worcester, 2nd.

In the section for Tea or Noisette Rose grown by amateurs, twelve distinct, Mr. A. H. GRAY, Bath, came 1st, showing Bridesmaid, Maréchal Niel, Cleopatra, Comtesse de Nadaillac, &c.; OSMOND ORPEN, Esq., 2nd.

For six blooms of new Roses, open to all amateurs, the Rev. J. H. PEMBERTON took 1st.

For twelve distinct varieties of garden or decorative Roses there was good competition, and some charming varieties shown; the premier award being won by H. V. MACHIN, Esq., who showed W. A. Richardson, Gustave Regis, Gloire de Polyantha, &c.; 2nd, Rev. J. H. PEMBERTON, Havering, his stand including a fine bunch of Rambler.

In the local classes for bouquets of Roses, &c., the chief awards were taken by Mr. TOM FARRAR, of Halifax, and Messrs. CALEN & SON, of Heath, both of whom showed very excellent taste in their arrangements.

In the class open to Rose growers of Halifax and district the premier award was taken by Mr. H. CONWAY.

During the afternoon a meeting was held in a tent on the show ground, at which, under the presidency of Archdeacon BROOKE, Vicar of Halifax, an exhaustive paper on Rose exhibiting was read by Mr. G. PAUL, V.M.H., and at the close of the reading of the paper a spirited discussion ensued, in which Mr. ALEXANDER DICKSON, Mr. COOLING, Mr. F. CANT, Rev. H. PEMBERTON, and others took part.

KENILWORTH HORTICULTURAL.

JULY 14.—The fifth annual exhibition of the above Society was held on the above date, in brilliant weather. The Earl of Clarendon not only granted permission to the committee to hold the exhibition in the Castle grounds, but kindly undertook to open the show also. The exhibition was decidedly superior to that of previous years.

The exhibits were displayed in two large tents, and in one of these was an honorary exhibit from the Right Hon. Lord LEIGH, Stoneleigh Abbey (gr., Mr. H. T. Martin). This group of very fine plants included immense Kentias and Arecas, intermingled with well-coloured Codiaeums and Eulalias; also Asclepias curassavica, Francoa ramosa, Rhodanthes, and Caladium argyrites. A handsome group of plants of hybrid Streptocarpus, intermixed with Maidenhair Ferns, was also from Stoneleigh Abbey gardens.

W. T. PEARNS, Esq., Parkfield House, Kenilworth (gr., Mr. Everitt), staged a charming group of foliage and flowering plants.

Mr. DEVERILL, of Banbury, exhibited bunches of flowers of herbaceous perennials, in sixty varieties, amongst which was the new *Coreopsis* var. *lanceolata grandiflora*.

Mr. FRED PERKINS, nurseryman, Leamington, had an attractive exhibit in his new Carnation Primrose Queen, also a large stand of Roses, Sweet Peas, and herbaceous perennials. Mr. W. FINCH, of Coventry, showed his new and promising Codieum, named *Distinction*. Messrs. HINTON BROS., of Warwick, staged a fine collection of Sweet Peas in variety.

The competitive class for the best group of plants made an excellent show. G. BEARD, Esq., Thickthorn, Kenilworth (gr., Mr. Snow), gained 1st honours; and F. B. WRIGHT, Esq., Warwick (gr., Mr. J. Huckwell), 2nd. F. B. WRIGHT, Esq., took 1st place for specimen foliage plants, his most noteworthy plant being one of *Cycas revoluta*.

For six specimen flowering plants, F. B. WRIGHT, Esq., was well to the front, and this exhibitor also showed fine specimen Ferns.

The fruit staged was of high quality. Strawberries (for the cultivation of which the district is noted) were excellent, and many dishes and baskets of fine fruits were displayed. Sir J. Paxton, Royal Sovereign, and Waterloo were noted as the best shown. Currants, black and red, were shown in quantity. Lord LEIGH sent a collection of ten dishes in as many kinds of fruit. The cottagers' tent contained many excellent exhibits of vegetables, fruits, and flowers.

READING HORTICULTURAL.

JULY 14.—The Summer Show of the above Society was held in the Fosbury Gardens, in a series of tents decidedly too small for the purpose, which caused much crowding of the exhibits, and left but little space for locomotion. The usual exhibition place within the Abbey ruins was on this occasion fitted up for pastoral plays.

Groups of plants arranged for effect were a leading feature, and in one class the Reading Horticultural Society's Cup was offered. This was won by Mr. H. Woolford, gr. to ALFRED PALMER, Esq., with a bold and admirably-finished arrangement, rich in foliage and flowering plants. At the back of the group were two fine specimens of *Cocos plumosa*, with only a small Palm between them, dispensing with the large

central back ground specimen, which is generally thought indispensable. The effect of the group was decidedly heightened by departure from the usual custom.

The Sutton Challenge Cup, offered in another class for a large group, was won by Mr. Peel, gr. to Miss TODD, Shirley. This, unlike the semicircular shape carried out by Mr. Woolford, was in the form of a square, having, as a background, elegant Palms, smaller specimens of which were also used nearer the front, dot-plants of *Papyrus anti-quorum*, very effective; raised plants of *Nepenthes*, several handsome pendent *Crotons*, blue *Hydrangeas*, &c. Mr. WOOLFORD was 2nd.

In the gardeners' and amateurs' division, there was but one group, and the 1st prize was awarded to Mr. Chamberlain, gr. to F. M. LONERGAN, Esq., Cressingham Park. Mr. PEEL was the only exhibitor of eight stove and greenhouse plants.

In the amateurs' division, Mr. Leith, gr. to A. B. W. THORNTON, Esq., Beaupaire Park, was 1st, having *Cycas revoluta*, a good example of the *Swansonia galegifolia*, and two others; he also had the best six fine foliaged plants.

Mr. WOOLFORD had the best six stove and greenhouse Ferns, and Mr. LEITH was 1st with four foliaged plants. The best specimen stove and greenhouse plant was *Ixora coccinea* from Mr. PEEL.

Three charming specimens of Orchids were exhibited by Mr. WOOLFORD, consisting of *Cattleya Gaskelliana*, *Epidendrum vitellinum*, and *Cynoches chlorochilum*.

Some very pretty plants suitable for table decoration were staged by several exhibitors.

Fuchsias were nicely shown by Mr. BRIGHT, of Whiteknights. Double *Pelargoniums* were poor, but tuberous-rooted *Begonias* were fine, Mr. WOOLFORD taking the 1st prize with some excellent plants; the 2nd prize going to Mr. R. BASSIL. The best three Palms came from Mr. LEITH.

Roses formed the bulk of the cut-flowers, one tent being set apart expressly for them. With thirty-six varieties Mr. C. TURNER, Slough, and Mr. J. MATTOCK, Oxford, were placed equal 1sts.

Mr. MATTOCK had the best eighteen Teas and Noisettes, staging very good blooms.

The best twelve blooms of any one variety were beautiful ones of Mrs. J. Laing, from Mr. C. TURNER.

Mr. CAMBRIDGE, Aldermaston, had the best twenty-four blooms in the local classes; Mr. J. R. TRANTER, Henley, was 2nd. And they occupied the same positions with twelve Teas and Noisettes.

The best twenty-four varieties in the amateurs' division were from Mr. P. BURNAND, Reigate; Mr. Mease, gr. to A. TATE, Esq., Leatherhead, was 2nd.

Mr. MEASE had the best twelve Teas; Mr. W. C. ROMAINE, Windsor, was 2nd.

There were several local classes, and one for garden Roses brought fine bunches.

FRUITS AND VEGETABLES.

Mr. J. McHATTIE, gr., Strathfieldsaye, staged the best six dishes of fruit, having Black Hamburgh and Buckland Sweetwater Grapes; Violette Hative Peach, Lord Napier Nectarine, smooth Cayenne Pine and a Melon, a very good lot; Mr. TURTON, gr., Maiden Erlegh, was 2nd. Mr. OSMAN, gr., Ottershaw Park, had the best three bunches of Black Hamburgh Grapes, finely coloured; Mr. WOOLFORD was 2nd. Any other black was represented by good Madresfield Court from Mr. Tidy, gr. to W. K. D'ARCY, Esq., Stanmore Hall; Mr. GALT, gr. to C. E. KEYSER, Esq., Aldermaston, was 2nd. Mr. GALT had the best three bunches of white Grapes, staging Duke of Buccleugh.

Messrs. SUTTON & SONS' special prizes for nine kinds of vegetables brought several collections, all of which were of fine quality. Mr. R. LYE, gr., Sydmon Court, Berks, was 1st; Mr. C. J. WAITE, gr., Glenhurst, Esher, 2nd.

MISCELLANEOUS.

Mrs. PHIPPEN, floral decorator, Reading, had some charming arrangements in flowers, showing originality in design, and fine taste in execution. Messrs. WEBB & SONS, Wordsley, Stourbridge, showed bunches of Sweet Peas. Mr. F. G. FOSTER, Brockhampton Nurseries, Havant, had also Sweet Peas; and Mr. W. TAYLOR, Hampton, a box of excellent cut Roses. A group of very good Malmesbury Carnations was staged by Mr. GALT.

SHIRLEY AND SURROUNDING DISTRICTS GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT.

JULY 16.—The fourth annual outing of the above Society took place on the above date, when about thirty members journeyed to London to view the gardens of the Royal Horticultural Society, Chiswick, and those of Gunnersbury Park, Acton, the former by kind permission of the Council, and the latter by that of Leopold de Rothschild, Esq.

On the arrival of the party at Chiswick, they were met by the Superintendent, Mr. S. T. WRIGHT, who conducted the party over the gardens, pointing out everything likely to be of interest to gardeners. After two hours spent here, the party were conducted by Mr. WRIGHT to Gunnersbury Park, where they were met by the head gardener, Mr. G. REYNOLDS, and by Mr. HUDSON, head gardener at the adjoining Gunnersbury House. But before proceeding to inspect the grounds, the party sat down to luncheon, hospitably provided by L. de Rothschild, Esq.

A ramble through the ornamental part of the park, the glasshouses, &c., was much enjoyed. The party then visited the Gunnersbury House gardens.

CARDIFF HORTICULTURAL.

JULY 20, 21.—Upon all previous occasions this Society has held its annual show towards the close of August, but the committee has made an innovation by holding it this year on the above dates, with a view to obtaining an increased attendance, so many people leaving the town during August for the holidays. This purpose they achieved upon the opening day at least, and it is gratifying to record that, with the exception of fruits and vegetables, the innovation has resulted in a wider and keener competition in most of the classes.

That the fruit display should have suffered is to be regretted, for hitherto the Cardiff show has held a prominent position in this respect, the fruit exhibits being amongst the finest in the provinces; but the position could not be retained a month earlier in the season.

The weather—a most important factor in the success of a flower show—was ideal, and the grounds of the Sophia gardens looked their very best, and have many shaded avenues and verdant lawns, which lend facilities for the dispersion of marquees and tents in a charming manner.

Plants.—The marquee devoted to the groups of miscellaneous plants arranged for effect was one of the chief attractions. The premier position for a group of plants in and out of bloom, arranged to produce the best effect, and occupying a space of 100 square feet, was easily secured by Mr. JAS. CYPHER, Cheltenham. His arrangement was charmingly light and graceful, and the effect was enhanced by a light cork bridge construction, surmounted by a Cocos Palm and medium-sized plants of *Humea elegans*, and festooned with Ferns, Asparagus, and other light drooping plants. Four very fine plants of *Humea elegans* had a wonderful effect upon the whole, and numerous plants of the Japanese Maple proved quite a feature. Rockwork was employed in the foreground, and some well-coloured Crotons and plants of the new *Acalypha Sanderi* gave a distinctness to the arrangement both commendable and pleasing. Mr. RALPH CROSSLING, Penarth, was a good 2nd, but with quite a different arrangement, lacking the characteristic lightness of the former group. The plants, however, were good specimens. Messrs. CASE BROS., Cardiff, were 3rd, with a somewhat heavy compact group, comprised chiefly of Liliacs and Gloxinias.

For the group of plants arranged to produce the best effect, occupying a space of 50 feet, open to amateurs only, Mr. W. Carpenter, gr. to W. J. BUCKLEY, Esq., Llanelly, took 1st position with a very pretty group, including *Celosias*, *Lilium auratum*, *Anthuriums*, and well-coloured *Acalyphas*, *Dracenas*, and *Crotons*; the 2nd prize was won by Mr. J. Howe, gr. to G. RUTHERFORD, Esq., Dulwich House, Cardiff.

In the groups of miscellaneous plants, covering 25 feet, Mr. H. Rea, gr. to C. WALDRON, Esq., Llandaff, was 1st.

In the specimen plant section, Mr. CARPENTER was 1st, for six stove and greenhouse Ferns, with *Cyathea dealbata*, *Dicksonia antarctica*, *Adiantum Williamsii*, *Gymnogramma peruviana argophylla*, and *Davallia Mooreana*; Mr. Malpas, gr. to J. LYNN THOMAS, Esq., Green Lawn, Cardiff, was 2nd.

For six stove and greenhouse plants in bloom, Mr. LOCKYER, gr. to J. C. HANBURY, Esq., Pontypool Park, was 1st with good trained plants of *Ixora Williamsii*, *Phenocoma prolifera*, *Statice profusa*, *Anthurium Scherzerianum*, *Bougainvillea Sanderiana*, and *Gloriosa superba*. 2nd, A. T. ROBINSON, Cardiff. Mr. LOCKYER had the best specimen stove and greenhouse plant in a well flowered *Clerodendron Balfouriana*.

Mr. DAVIS, of Yeovil Nurseries, took 1st prize for the best twelve plants of tuberous-rooted Begonias in not fewer than six varieties, showing a capital group.

Cut Flowers.—In the cut-flower section the competition for Roses was very keen, there being magnificent collections from many parts of the kingdom.

For the best twelve varieties of H.P.'s in trebles, Messrs. TOWNSEND & SONS, Worcester, were first with perfect examples of Mrs. John Laing, Marchioness of Londonderry, A. K. Williams, Caroline Testout, Merville de Lyon, Duke of Wellington, &c.; Messrs. COOLING & SONS, Bath, occupied 2nd position.

For twelve Tea Roses, in trebles, Messrs. TOWNSEND & SONS were again 1st, showing Madame de Watteville, Caroline Testout, Comtesse de Nadaillac, Madame Cusin, Francisca Kruger, The Bride, Ernest Metz, Souvenir de Etienne Levet, Innocente Pirola, Maréchal Niel, Catherine Mermet, and Jean Ducher; A. HILL GRAY, Esq., Bath, was 2nd in this class.

For twenty-four H. P. blooms, distinct, Messrs. TOWNSEND & SONS excelled Mr. STEPHEN TRESEDER, Cardiff, who, however showed commendably.

For eighteen distinct varieties of Teas, Mr. JOHN MATTOCK, Oxford, beat Messrs. D. & W. CROLL, Dundee.

The best H.P. Rose, shown in a group of twelve blooms, any one variety, was Horace Vernet, from Messrs. TOWNSEND & SONS, and Mr. JOHN MATTOCK, Oxford, had the best dozen blooms of any Tea Rose, showing magnificent specimens of Comtesse de Nadaillac.

There was a class also for a collection of Roses shown with their own foliage and buds, and in this interesting competition Mr. J. MATTOCK was 1st and Mr. R. CROSSLING, Penarth, 2nd.

Seedling Carnations in a competitive class were best from Mr. W. TRESEDER, Cardiff, who was also first for a collection of hardy flowers.

Florists' Exhibits.—The Cardiff Show has been noted for the very fine exposition of artists' specialties made there, but this year the display and competition in these classes was especially good. As on former occasions, the local competitors have succeeded in holding the best positions.

Fruit was not so good as usual, as we have already remarked; but Mr. Hollingsworth, gr. to Miss TALBOT, Margam Park, showed some very fine bunches of Black Hamburg Grapes, and a dish of Peaches, which deservedly took 1st prizes. Melons were lamentably poor.

With respect to vegetables, the entries were few, but the quality was high.

Trade Exhibits.—Though there were many very commendable honorary exhibits, that from Mr. W. TRESEDER, Cardiff, which was awarded the Cup offered by the Mayor of Cardiff, this year for the first time surpassed all others. His collection of Cactus Dahlias was splendid for so early a date. Amongst the conspicuous varieties were Mrs. Wilson Noble, a lovely, salmon-coloured variety; Starfish, an excellent scarlet flower; Lady Penzance, primrose; and Cinderella. The display of hardy perennials, too, was grand, and the coveted prize of the Cup was well deserved by this exhaustive exhibit.

Messrs. ECKFORD's collection of Sweet Peas was up to the usual standard of his exhibits, and being arranged lightly with grasses, was charming. Fascination, Duke of Westminster, Duchess of Westminster, Mrs. Dugdale, Lady Mary Currie, Othello, and Senator were particularly fine varieties.

Messrs. DOBBIE & SONS, of Rothesay, N.B., staged some nicely-arranged exhibits of Violas, Sweet Peas, and Pelargoniums, for which the firm enjoys a well-earned reputation.

Messrs. GARRAWAY, of Clifton, showed a clean healthy lot of stove and greenhouse plants. Mr. W. J. GODFREY, Exmouth, displayed to advantage Cannas, Sweet Peas, and hardy flowers. Messrs. BARR & SONS, King Street, London, brought from Ditton a collection of hardy perennials; and Mr. B. R. DAVIS, Yeovil, showed some splendid blooms of tuberous Begonias.

THE SCOTTISH HORTICULTURAL ASSOCIATION, EDINBURGH.

JULY 20.—From 2 to 6 P.M. an exhibition was held in the Albert Hall, Shawdrick Place, which was, horticulturally, a decided success. The trade, as is usual, and many private gardeners, supporting it capably, and filling the tables with an abundance of good things. This is the more creditable to all concerned, as no money prizes are offered by the association, only certificates awarded, excepting to superior novelties and excellence of culture. Admission to the show was without charge, but instead a collection was taken on behalf of the gardeners' charities as the public left the hall. The weather was brilliant, the attendance good, and it is hoped that the receipts will prove sufficient encouragement to the holding of an annual summer show in Edinburgh.

The trade tables were well furnished, that of Mr. A. B. LAIRD at the end of the Hall being richly set out with Palms in variety, and other foliaged plants of *Clerodendrons fallax*, *Carex elegans*, *Ophiopogon Jaburan foliis variegatis*, *Asparagus*, *Dracenas*, *Eulalia zebrina*; and some half a dozen wooden posts or pillars in front were very skilfully rendered verdant with Smilax, and crowned with white-flowered Lilies.

Mr. JOHN DOWNIE had a table richly furnished with fine Palms, Cladiums, Cannas, Ferns, Begonias, one a new crimson-coloured variety of unusual size and smoothness of form. He had a fine thrifty plant of *Dracena Goldseiffiana*, and a specimen of the remarkable *Acalypha Sanderi*.

Messrs. DICKSON & Co., had a choice collection of Pinks, tufted Pansies, and Violas, about eighty of the finest varieties of the best in cultivation. In this collection was also shown one of the most striking variegated plants yet seen in Sambucus racemosa serratifolia var. aurea; a remarkable collection of garden, Polyantha, and monthly Roses; *Hedysarum multiflorum*, from Mongolia, a charming shrub, covered with Pea-shaped flowers; *Veronica Purple Queen*, *Hypericum densiflorum*, *Spiraea callosa*, *Cytisus hirsutus*, but little known, being a shrub that flowers throughout the summer.

Messrs. JAMES COCKER & SONS, Aberdeen, staged a fine collection of more than 100 bunches of herbaceous perennial plants, rich in Delphiniums and Irises; and thirty-six bunches of garden Roses. Among the last-named Bronte's Inconstant was probably the most striking variety, although the following were very rich, Laurette Messimy, Perle d'Or, Madame Hoste, Sorella, and Marie Van Houtte.

Messrs. J. GRIEVE & SONS, of Red Braes, had a table chiefly filled with *Araucaria excelsa*, *Pandanus*, Ferns, and Palms, with masses of Violas between them. Mr. W. CUTHBERTSON, of Rothesay, showed a fine table of herbaceous perennial plants, and Messrs. LAIRD & MATHER, of Kelso, a new crimson-flowered Souvenir de la Malmaison Carnation. The following growers contributed fine collections of Roses, viz., Messrs. COCKER, Aberdeen; HUGH DICKSON, Stranraer, Belfast; T. SMITH & SONS, Stranraer, and B. W. CROLL, Dundee. I believe a Certificate of Cultural Merit was awarded the exhibitors from Stranraer for their Roses, which were especially noted for the size and clearness of their outer petals. There were also Roses from private growers and from the grower, Trinity, including a fine vase of blooms of Niphetos, which is remarkably well grown by Mr. MCKENZIE.

The chief table decorations consisted of Iceland Poppies and Roses, of which more anon.

There was a fine collection of Strawberries on view and for tasting. Mr. McIntyre, gr. at The Glen, Inverloithen, Peebleshire, sent Strawberry Glen Diamond, a variety that was new to me; and President, of remarkable goodness. Mr. BAIN, gr., Hadfast, sent one dozen dishes of Royal Sovereign.

Mr. ALEX. KIRK, gr., Norwood, Alloa, sent nine dishes of Strawberries, one of them being Queen of Denmark. Mr. J. CARMICHAEL sent Latest-of-All, Princess of Wales, Garibaldi, Royal Sovereign, and Competitor, a large cockscomb-shaped fruit. Strawberries from Mr. Comfort, gr. to Mr. HAY, Broomfield, consisted of Bicton Pines (named Bicton Hall), still our best white-fruited variety; John Ruskin, Latest-of-All, and Royal Sovereign.

Mr. WM. TEMPLE, gr., Carron House, Carron, sent dishes of Duke of Edinburgh Strawberry, very fine, said by some experts to be identical with James Veitch; and of Royal Sovereign; from Mr. MATTISON, Currie Hall, Currie, there were dishes of Duke of Edinburgh and Royal Sovereign; from Mr. GEORGE WOOD, gr., Oswald House, Royal Sovereign; from Mr. MCKENZIE, The Grove, Trinity, came Scarlet Queen, John Ruskin, Waterloo, Garibaldi, Royal Sovereign, and a fine spray of Waterloo—a fine exhibit for so small a private garden.

Mr. DUNN of Dalkeith sent a fine exhibit, consisting of eighteen dishes and ten bunches, in order to show the fruiting character of the varieties. The bunches were one of Red and another of White Alpines, raised annually from seed; Auguste Nicaise, James Veitch, Garibaldi, Belle de Medici, Ferdinand d'Orleans, Jubilee, Prince of Wales, and Queen of Connaught. There were also fine dishes of the following:—Two of Royal Sovereign, three of James Veitch, two Scarlet Queen, two of Garibaldi, one British Queen, one Queen of Denmark, one Richard Gilbert, one Princess of Wales, one Red and one White Alpine, one Veitch's Perfection. The latter is not quite ripe, though the flavour is good. D. T. F.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	Above (+) or below (−) the Mean for the week ending July 16.	ACCUMULATED.				(More +) or less (−) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 2, 1898.	Below 42° difference from Mean since January 2, 1898.				
0	1 +	98	0	+ 137	− 228	6 −	141	29.7	36
1	2 +	116	0	+ 98	− 222	6 −	106	12.7	44
2	1 −	112	0	+ 117	− 216	6 −	97	10.1	52
3	2 −	116	0	+ 36	− 207	6 −	89	10.2	52
4	1 +	127	0	+ 24	− 215	6 −	87	9.1	54
5	0 aver	130	0	+ 68	− 243	5 −	84	9.8	48
6	1 +	111	0	+ 128	− 217	7 −	122	10.6	48
7	1 −	116	0	+ 111	− 244	7 −	101	16.7	56
8	2 +	132	0	+ 101	− 156	7 −	95	14.9	57
9	1 +	113	0	+ 105	− 168	6 −	129	17.6	37
10	3 +	139	0	+ 165	− 134	7 −	97	16.8	49
*	2 +	141	0	+ 209	− 93	5 −	107	12.0	69

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending July 16, is furnished from the Meteorological Office:—

"The weather was again fine and bright in nearly all parts of the kingdom, the only rainfall recorded being slight quantities on our extreme north-western coasts, and still slighter amounts at some of our south-eastern stations.

"The temperature was a little above the mean in most districts, but only just equal to it in 'England, S.,' and rather below it in 'England, E., N.E., and N.W.' The highest of the maxima occurred towards the end of the week, when they ranged from 85° in 'England, S.' (at Southampton), and from 81° or 80° in several other parts of England and in 'Scotland, E.,' to 77° or 76° in Ireland, 74° in 'Scotland, N. and W.,' and to 73° in 'England, N.W.' At

the commencement of the week the maxima recorded over the south and east of England were very low. The absolute minima, which generally occurred either on July 11 or 14, varied from 37° in 'England, E.,' 88° in 'Scotland, E. and W.,' and 89° in the 'Midland Counties,' to 48° in 'Ireland, S.,' and to 52° in the 'Channel Islands.' At Cullompton, on July 14, a thermometer exposed on the grass fell as low as 81° 4°.

"The rainfall was almost entirely absent from England and 'Ireland, S.,' but slight falls were experienced at times in Scotland and 'Ireland, N.'"

"The bright sunshine exceeded the mean in all districts, the excess being very considerable in most places. The percentage of the possible duration ranged from 69 in the 'Channel Islands,' and from 57 in 'England, S.W.,' 56 in 'England, N.W.,' and 52 in 'England, E. and N.E.,' to 44 in 'Scotland, E.,' 37 in 'Ireland, N.,' and 36 in 'Scotland, N.'"

VARIORUM.

HARTON CEMETERY, SOUTH SHIELDS.—The pretty little cemetery of Harton, South Shields, has now assumed its summer garb; it is very beautiful in appearance, and the flowers scent the air with a pleasant fragrance. The spring decorations have all vanished except the Queen Stocks. At the entrance-gate they are planted in an irregular outline of three rows, the centre being white, and contrasting admirably with the other two, which are rose-coloured; the whole lending a charming appearance to the entrance to this neat and well-kept burial-ground. The carpet-bedding is completed with new and choice designs, and there is an abundance of hardy plants which have been acclimatised for that particular purpose. The alpine and herbaceous plants are now a very extensive collection, and of these there are many choice varieties in full bloom amongst the rocks near the churches, all these plants being correctly labelled for the instruction of visitors. The rare Edelweiss is just coming into bloom. Another interesting plant in bloom is the *Erinus alpinus*, to which reference is made by Dr. Bruce in his well-known *Guide to the Roman Wall*. A plant of this species was received by the superintendent of the cemetery, Mr. Bernard Cowan, F.R.H.S., from the Chesters, and Dr. Bruce thought the seed must have lain there from the time of the Romans [?]. It is now in full bloom, and may be seen on the northern border near the superintendent's residence, *Newcastle Daily Chronicle*, July 8, 1898.

MARKETS.

COVENT GARDEN, JULY 21.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, 12 blooms	3 0-4 0
Carnations, pr. doz.	1 0-3 0
Eucharis, per dozen	2 0-4 0
Gardenias, per doz.	1 6-3 0
Gladioli, white, doz.	0 3-1 0
Lilium Harrisii, per	2 0-4 0
dozen blooms	0 6-1 0
Lily of the Valley,	4 0-8 0
dozen sprays	2 0-4 0
Maidenhair Fern,	1 0-2 0
per 12 bunches	1 0-2 0
Mignonette, per 12	1 0-2 0
bunches	1 0-2 0
Orchids:—	
Cattleya, 12 bms.	5 0-8 0
Odontoglossum	2 0-4 0
crispum, 12 bms.	3 0-5 0
Pelargoniums, scar-	0 4-0 6
let, per 12 bun.	0 6-1 0
— per 12 sprays	1 0-2 0
Roses, Tea, per doz.	2 0-4 0
— yellow (Pearls),	1 0-2 0
— pink, per dozen	1 0-2 0
— Safrano, p. doz.	0 6-1 0
— red, per dozen	1 0-1 6
Stephanotis, doz.	1 0-1 6
sprays	1 0-1 6
Tuberose, 12 blms.	1 0-1 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz.	4 0-12 0
Aspidistras, p. doz.	12 0-30 0
— specimen, each	5 0-15 0
Calceolarias, per doz.	5 0-7 0
Coleus, per doz.	3 0-4 0
Crassula, per doz.	12 0-24 0
Dracenas, each	1 0-7 6
— various, p. doz.	12 0-24 0
Erics, various, per	12 0-30 0
dozen	6 0-12 0
Evergreen shrubs,	6 0-24 0
in variety, p. doz.	1 0-2 0
Ferns, small, per	5 0-12 0
dozen	1 0-2 0
— various, p. doz.	5 0-12 0
Ficus elastica, each	1 0-7 6
Fuchsias, per doz.	6 0-9 0
Foliage plants, per	12 0-36 0
dozen	5 0-7 0
Heliotropes, p. doz.	5 0-7 0
Hydrangeas, various,	10 0-18 0
per doz.	12 0-30 0
Liliums, various,	6 0-12 0
per dozen	4 0-6 0
Marguerites, p. doz.	2 0-10 0
Mignonette, p. doz.	10 0-18 0
Palms, various, ea.	12 0-30 0
— specimens, ea.	4 0-6 0
Pelargoniums, doz.	4 0-6 0
Rhodanthes, p. doz.	3 0-6 0
Scarlets, per doz.	6 0-9 0
Spiraeas, per dozen	

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe,	0 9-1 6
per doz.	0 6 0 8
Beans, English	0 6 —
(Dwarf), lb.	4 6-5 0
— Channel Islands,	4 6-5 0
per lb.	1 0-1 6
— sieves	1 0 —
— French, flats	4 0-5 0
— Broad, bushel	4 0-5 0
Beetroots, per doz.	2 0-3 0
— p. tally of 60	2 6-3 0
Cabbage, open, doz.	0 6 —
— open, p. tally	2 6-3 0
Cauliflowers, Eng-	2 0-3 0
lish, per dozen	1 6 —
Cress, doz. punnets	1 6-2 0
Carrots, New, bun-	1 6-2 0
ches, per dozen	0 9-1 0
Celery, new, per	2 0 —
bundle	1 6-2 0
Cucumbers, p. doz.	0 9-1 0
Endive, new, per	2 0 —
dozen	3 0-6 0
Garlic, new, per lb.	2 0-3 0
Horseradish, foreign	0 6-1 0
per bundle	5 6 —
Leeks, new, dozen	
bunches	
Lettuce, Cabbage,	
home-grown,	
per doz.	
— Paris Cos, home-	
grown, per score	
Marrows, Vege-	
table, per dozen	
Mint, per dozen	
bunches	
Mushrooms, per lb.	
Onions, Egypt., bags	
Onions, green, per	
doz. bun.	
— Valencia and	
Oporto, cases	
— Portugal	
Parsley, per dozen	
bunches	
Peas, bags	
— Blues, Harri-	
son's Glory, per	
bushel	
Potatoes, Channel	
Isles, Kidneys,	
cwt.	
— Puritans, the	
best Kent, per	
bushel	
— Ashleaf	
— Kent Kidneys,	
per bushel	
— Beauties, p. r	
cwt.	
Radishes, Round,	
breakfast, per	
dozen bunches	
(home grown)	
Salad, small, pun-	
nets, per dozen	
Shallots, new bun-	
ches, per dozen	
Spinach, 3-bushel	
Tomatoes, English,	
per lb.	
— Channel Isles,	
per lb.	
Turnips, new Eng.	
per dozen	
Watercress, p. doz.	
bunches	

POTATOS.

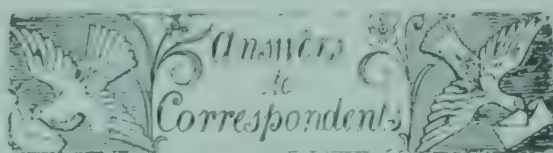
Home grown, Kents and Oxfordshire, 75s. to 110s.; Jersey and French, 70s. to 90s. per ton. John Bath, 32 and 34, Wellington Street, Covent Garden.

(Remainder of Markets carried forward to p. vii.)

ENQUIRY.

"He that questioneth much shall learn much"—BACON.

EXHIBITING THE TREE LUPIN.—A question was raised at an exhibition, writes "W. G.," as to whether the Tree Lupin (*Lupinus arboreus*) is admissible in a collection of hardy herbaceous plants. In the North of Scotland (where the objection to it occurred), the plant, it is said, dies down annually as completely as a true herbaceous plant, while in the south and warmer parts it is truly shrubby. Perhaps some reader can in time a similar objection, and state how the matter was decided.



BOUVDIA: T. S. The mysterious Bouvardia disease, concerning which little is known.

CARNATION PLANTS ALL FLOWER-STEMS AND NO "GRASS." *Subscriber.* If you remove the stems of those seedlings that are worth preserving, the plants would throw up shoots; and should these be large enough in early September for layering in the usual manner, you might get them rooted, otherwise they must take their chance—and should they survive the winter, as they doubtless will, there will be a chance of early layering next year. Of course, you might lift the root-masses in October, and pot them, keeping them through the winter, and strike cuttings in bottom heat.

CATERPILLAR: E. L. The larva of some Hawk moth.

CHRYSANTHEMUM: J. Smith. We believe that the leaves are affected with a slime-fungus (*Pseudocommis*). Burn all the affected plants.

CYANIDE OF POTASSIUM AND MEALY-BUG: Alex. P. Haig. Very deadly to all animal life, but does not, when used according to the directions given in our leader, cause injury to plants, flowers, or fruit. The Grapes would be fit for use soon after the use of the cyanide, but exercise extreme care.

GRAPES: E. J., E. J. II., and F. J. Your Grapes are affected with spot, caused by a fungus, *Gloeosporium laticolor*, often mentioned in these columns. Destroy every affected berry. That is all you can do this year.

LAVENDER CULTURE FOR COMMERCIAL PURPOSES: W. Easter. Several articles descriptive of the culture of this plant have appeared in the *Gardeners' Chronicle*, but the numbers are out of print. Consult *The Art of Perfumery*, by Mr. Piesse, published by Longmans & Co.; and for formulas of manufacture of Lavender-water, *Odorographia*, by J. Ch. Sawer, published by Gurney & Jackson, 1, Paternoster Row, London, E.C.

NAMES OF FRUITS: *Persica laevis*. Nectarine Old Newington, if the tree have large flowers, and no glands on the leaves.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—J. C. & Co. *Phacelia congesta*, Hook.—T. Barre. *Oenothera biennis*, the Evening Primrose.—A. Murdon, *Mowbray*. *Cotoneaster affinis*.—W. T. T. *Lonicera Ledebouri*.—J. W. *Hippocrepis comosa*.—S. M. *Genista tinctoria*.—*Subscriber*. *Asparagus Sprengeri*, *Tamarix germanica* (not a Thuya), a first-rate seaside shrub.—E. W. 1, *Maxillaria tenuifolia*; 2, *Cirrha viridi-purpurea*; the latter not common.—Anstie. 1, *Galea officinalis alba* (Goat's Rue); 2, *Agrostemma coronaria*; 3, *A. c. alba*; 4, *Lychnis chalcidonica*; 5, *Agathaea caelestis*; 6, *Begonia vivicaus*.—J. H. 1, *Ononis arvensis*; 2, *Genista tinctoria*; 3, *Origanum vulgare*; 4, *Hypericum perforatum*; 5, *Centaurea scabiosa*; 6, *Astragalus glycyphyllos*.—P. de L. *Stanhopea Martiana*.—H. K. G. 1, *Epilobium montanum*; 2, *Centranthus ruber*; 3, *Aegopodium podagraria*; 4, *Asperula odorata*; 5, *Vicia minor*; 6, *Mercurialis perennis*.—A. S. *Bristol*. *Berberis Wallichiana*.—A. C. *Echium vulgare*.—A. C. K. Never pack flowers in cotton-wool. 1, *Stanhopea Wardi*; 2, *Streptosolen Jamesoni*; 3, *Humea elegans*.—A. C. F. Send when in flower.—J. W., *Kirkstall*. *Kniphofia foliosa*; *Hochstätter*, *Bot. Mag.*, t. 6742.

ROSE BLOOMS WITH GREEN CENTRES: H. H. The central mass of petals and organs have turned into leaves; which demonstrates the close connection between these two apparently very dissimilar parts of a plant. The causes are not known, as it has been known to occur alike on starved and well cultivated plants.

SPINELESS GOOSEBERRY, &c.: E. Carrol. See *Gardeners' Chronicle* for July 27, 1895, pp. 100 and 101, for figures and description. It was exhibited by MM. Letellier of Caen, at the meeting of the Royal Horticultural Society, on July 23 of that year. Some of the large growers of fruit trees may keep it, but it is said not always to retain its spineless character. In answer to your second question about shelter from north-west sea breezes, we think that you could not do better than to plant the evergreen Oak, *Quercus ilex*, in double and triple lines, some 18 to 20 feet apart, and fill in between them as nurse plants, to come out as the Oaks approach them closely, *Pinus austriaca* and *P. maritima*; and as undergrowth *Tamarix germanica*, *Portugal Laurel*, common Broom, *Berberis* (*Mahonia*) *aquifolia*, *B. dulcis*, *B. Darwini*, and single and double-flowered Gorse.

WATER FOR USE IN PLANT-HOUSES, &c.: E. S. You should obtain an analysis of the water from an analytical chemist. You would then know what is deleterious, and in what it is lacking.

COMMUNICATIONS RECEIVED.—R. A. R.—J. A.—J. F. N. B.—W. R.—C. T. D.—D. T. F.—J. R.—Hill & Co.—H. R.—G. N.—L. C.—R. P. B.—D. Inglis.—W. M.—G. Bray.—Bus.—D. R. W.—G. N.—W. Garton, Junior.—W. E. G.—G. P.—H. W. B.—N. E. B.—E. C.—J. A.—R. L. H.—S. M.—G. H. E.—J. Ambrose.—W. S.—A. G. N.—A. R.—H. T. M.—J. H. W.—E. S.—E. H. J.—W. B.—R. K.—J. S.—C. Wheatley and G. R. M., next week.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED.—J. F. N. B.—H. T. M.—F. W. B.—Robt. Veitch & Co.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED,
and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle.

SATURDAY, JULY 30, 1898.

"MY GARDEN."

THE expression "My garden" seems to imply that every garden is not alike, either in its general characteristics or in matters of detail. It is a mere truism, doubtless, to assert that many gardens are widely opposite to each other in interest, effect, and constitution.

My garden (providing I have an interest in it and love for it) is, to some extent, a reflection of my ideas, tastes, and character, and it must be so, it must differ from the gardens of most other people. The principles that underlie a man's conception of that part of a garden which is not concerned with the production of fruits and vegetables, are usually the principles that guide him in all his recreations, and that possibly are not dissociated even from his business life. Unless the garden has some commercial interest to its owner, we may conclude that it not only contributes to his happiness, but is designed for that purpose, and is maintained for the sake of the pleasure derived from it. Pleasure, in this case, we intend to be taken in its broadest sense; it may mean the passing of leisure hours in a listless, idle fashion amid sylvan glades and gay flowers, or it may mean the enjoyment of every moment that can be snatched from a short life, in enthusiastic admiration of fine effects in the flower, fruit, and vegetable garden. It may be much more than this even, and consist in the satisfying of a desire for knowledge, for intimate acquaintance with the constituents of the garden; its living inhabitants, whether plants, birds, fishes or insects. If it be the latter case, then just as much as in the two former cases does the garden contribute to the pleasure of its owner. Therefore, if the owner have sufficient interest in his garden to induce him to guide its formation and maintenance, it will follow that the garden so formed will deviate from the average type, in the direction its owner knows will enable it most to contribute to his pleasure.

This much may be said because we are apt to become narrow in our ideas of a garden, and what it should be. Unless it conform to a certain type, some persons will condemn it. Instead of doing this, however, it would be better to try and look at it in sympathy with its owner; try to see it through his eyes, and inasmuch as it is seen that it is well preserved, carefully maintained, and moreover is calculated to give him greater pleasure than any other form of garden would be capable of, one's toleration should be sufficient to enable us to admire something in it ourselves.

I had recently the pleasure to visit Mr. Smee's gardens, at The Grange, Hackbridge, and whilst thoroughly enjoying the many beautiful features it disclosed, I could not but

think that many estimable gardeners would have very little sympathy indeed with many of them.

One sometimes thinks that such and such a plant should be in every collection; this or that feature is thought to be equally indispensable to every garden. What scanty interest, however, there would be in visiting numbers of gardens if each was after the same pattern, if each had been designed by persons holding similar views as to what like a garden should be.

There is the enthusiastic plant-lover, who looks upon his garden as merely a place in which he can keep his treasures to their advantage and his own, but who possibly neglects the general effects entirely, and even has not the orthodox reverence for orderliness and neatness. It is a pleasure to visit such a garden, because if you are fortunate to do so in company with its owner, you are certain to be shown a great variety of rare and interesting species, and your guide will know all about them and their habits, whilst his enthusiasm for his plants will be apt to prove contagious.

Another garden may be totally different, for, we will suppose it has been formed for the purpose of providing scenic effects. The flower garden and the pleasure-grounds at every turn afford a different but charming view, and one cannot visit them without experiencing intense pleasure; for the eye is delighted by harmonious colour effects, or by equally ravishing landscape pictures. But possibly its owner is less careful of his plants as plants, than the owner of the garden described above. Then there is the specialist's garden, and there is much to be said for this. In one the specialty may be fruit, in another Roses, in a third Carnations, in a fourth Orchids, in a fifth Bamboos, or possibly Conifers, in a sixth Chrysanthemums or other florist's flower. It seems to us that a real lover of horticulture cannot visit either one of these without interest and pleasure, and it is usually the endeavours made in the "specialist's" garden that result in the general improvement of strains of plants, to the better embellishment of gardens of an opposite character.

We cannot understand a garden-lover who himself preferring to treat his garden in a natural, informal style, has a contempt for florist's flowers, any more than the dislike entertained by others to gardens which do not make a *spécialité* of their particular plant or style of arrangement.

These remarks, suggested by recent visits to Mr. Smee's garden and to some others of diametrically opposite character, are intended as a plea for more catholicity of taste amongst horticulturists, on the ground that every endeavour to practice the art of gardening, and every sacrifice on its behalf is entitled to our sympathy and appreciation. We did not intend to write a long or complete description of Mr. Smee's garden.

Most of the readers of the *Gardeners' Chronicle* have, I hope, read *My Garden*, an excellent book, written by the late Mr. Smee, in which he very fully described The Grange gardens, their style of treatment, the most interesting features and plants therein, and the natural history of the place; the birds, insects, and fishes found in the neighbourhood, and the geological conditions of Wallington. Each was given ample explanation. Mr. A. H. Smee, who had also a considerable share in the writing of the book, has maintained the gardens in much the same lines as did his father, and few, very few, alterations have been or are likely to be made. To those who may not have read *My*

Garden, it may be said that The Grange gardens are an illustration of the free hand, the most natural style of treatment. Informality, irregularity, and a disposition to make a cultivated garden as nearly an imitation of nature as possible, may be seen in almost every corner.

The residence itself is partially hidden by garden-Roses, *Wistaria sinensis*, *Eucalyptus globulus*, Clematises, &c.; and looking from the front windows over the lawn are seen a few beds of sub-tropical plants, and herbaceous perennials and Lilies; whilst a little further along, the Meadow Sweet, apparently in a wild condition in company with the common Nettle, is visible by the side of a streamlet. No "bedding-out" is there in front of The Grange, and if we wander to the lake the water for which is obtained from the river Wandle, the aquatic plants that hide its margins seem as fully at home as if wild. You would, indeed, look in vain for a ribbon-border, but in the quest you would be sure to encounter a quiet corner and a tempting summer-house; and if beguiled to enter, and listen to the warbling of the birds around, or enjoy the peeps of the garden obtainable from your seat, you would be difficult to please if you did not experience a delightful moment.

THE ORCHIDS OUT-OF-DOORS.

I doubt not it was Mr. Smee's love of treating everything as naturally as possible that first led him to cultivate the cooler species of Orchids during summer in the open air. The experiment proved successful, and the visitor to-day would find the *Odontoglossums* and the hardier *Oncidiums* standing upon a raft on the water under trees that thoroughly shade the plants, but where no other protection exists. Not only are the least valuable of these species so cultivated, but the choicer varieties of *Odontoglossum crispum*; *Oncidium macranthum*, and *O. Marshallianum*. The *Masdevallias*, too, are usually placed outside, but this season they have needed attention in the way of repotting, and are still indoors. There is an exceeding choice collection of *Cattleyas*, rich in valuable varieties. These are growing in a span-roofed house that has a metal roof and large panes of glass. The large amount of light and air they receive induce the plants to bloom exceptionally freely, but the leaves and pseudo-bulbs are less green in colour from the same reason. The glass-houses, from the gardener's standpoint are not remarkable; several of them are inconveniently small, and not the best adapted to the purposes they are put.

Fruit trees generally suffer, from the fact that there is water in many places at about 18 inches from the surface of the ground. When the roots enter this, the fruits sometimes split and cease to be satisfactory. This fact is an unpleasant one for Mr. Humphrey, who has succeeded Mr. G. W. Cummins in the management of Mr. Smee's garden.

I confess to an admiration of a certain amount of formality in the garden; the orderly management and appropriate merging together of the different sections, a free use of the beautiful strains of florists' flowers, and evidences throughout of skilful cultivation that helps every plant to attain to the maximum beauty of which it is capable, whether it be a *Malmaison* Carnation or a *Chrysanthemum*; but the smartest, best-kept garden I remember to have seen, nor the finest *Malmaison* Carnations, or exhibition Roses it is possible to produce do not prevent my appreciation of such delightful features as exist in the establishment the late Mr. Smee fondly described as "My Garden." R. H. P.

VEITCH'S PROLIFIC STRAWBERRY.

NOTWITHSTANDING there are numerous new Strawberries raised yearly, any variety that promises to become valuable invariably attracts the interest of gardeners, for the reason that the Strawberry crop whether forced or out-of-doors, is an important one in the economy of the fruit-garden. Veitch's Prolific, capially illustrated at fig. 20, was awarded a First-class Certificate at the meeting of the Royal Horticultural Society held on July 12. It resulted

it at its best last year at Wilhelmshöhe near Cassel, as I mentioned in my notes some time ago, and believe this is partly due to the somewhat higher altitude of the gardens there, and the cooler and fresher climate.

Begonia Bavaria originated in the nursery of Mr. W. Gerbel, Rorschach, Switzerland, in 1879, out of a batch of 600 to 800 seedlings raised by G. Klay, head gardener, from crossings between various Begonias, among which were B. Dregei, and Weltoniensis; its exact parentage is, however, not known. Exhibited for the first time in Rorschach in 1884, it attracted the attention of the Duchess of Hamilton, and of

three sides with hills and vineyards, the climate is very hot and sultry at times during the summer, and I have always found Begonia Bavaria to be at its best after a spell of cooler rainy weather—rain hardly having any effect on the flowers—or towards the autumn when the cool evenings set in to somewhat balance the heat of the day.

It flowers continually and late into the autumn, until it has to be removed for fear of frost. Producing hardly any female flowers, it cannot be raised from seed, and propagation by means of cuttings (or division of older tubers) is the only practical way of getting up stock.



FIG. 20.—VEITCH'S PROLIFIC STRAWBERRY.

from a cross between Empress of India and British Queen. It is of British Queen shape, but bright crimson in colour, and it ripens to the tip. The form is either cockscomb or conical; it is a most productive variety.

FOREIGN CORRESPONDENCE.

BEGONIA BAVARIA.

I do not know whether this Begonia has ever been noticed in these columns before; still, being such a beautiful variety, and, in my opinion, suited to the English climate, it may not be amiss to once again draw attention to it here. It has been cultivated several years in Stuttgart, and has always been very showy, especially towards the autumn. I saw

Herr Gartendirektor Dreher of Krauchenvics, and was finally taken up by the late Mr. Franz Buchner, of Munich, who distributed it in commerce as Begonia Bavaria.

Begonia Bavaria is a tuberous-rooted dwarf variety, 5 to 6 inches high, and has small, almost heart-shaped, dark green leaves. The flowers also are small, $\frac{3}{4}$ to 1 inch in diameter, and of a most beautiful delicate pink, slightly flushed with violet. It is very floriferous, producing, almost without exception, only male flowers, which stand quite regularly just above the foliage. In it we have a most useful variety for groups and bedding purposes. It stands a sunny as well as a shady position, although, as I have already mentioned, it seems to delight in cooler temperatures and situations than we, as a rule, can give it here.

Stuttgart, lying in a valley, and being enclosed on

This, however, requires some care. Cuttings may be made in May and June from tubers which have been started early into vegetation, or in August. The latter is the course we favour here, owing to pressure of business in spring. We generally try to secure cuttings which already have a few roots, and prick these out into carefully prepared frames, where they remain until finally taken up in autumn on the approach of cold.

The main thing, especially at first, to attend to is great cleanliness, and as much pure air as is possible for cuttings, for if closed up in a sultry impure air they will very soon damp off, which is very infectious when once started among cuttings of this plant. Another point to attend to is, when drying them off for the winter, not to cut the stems too near the tuber, or they will fail to start into growth the following spring. H. R. W., Stuttgart.

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1898.]

The words "average," "over," or "under," as the case may be, indicate the amount of the crop; and "good," "very good," or "bad," indicate the quality.

The counties are arranged in numbered groups, to correspond with those adopted in the Weather Reports of the Meteorological Department, and followed in our weekly Weather Tables.

* * Fuller comments will be given in the following numbers. See also Leading Article on page 86.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND—										
0, Scotland, N.										
CAITHNESS	Over; very good	Average	.....	Under	.....	.....	Average; very good	Average; good	.....	W. F. MacKenzie, The Gardens, Thurso Castle, Thurso
	Average; good	Under; bad	Average; good	Over; good	.....	.....	Over; very good	Average; good	Average; bad	Wm. Mackie, Gardener, Dun- beath Castle, Caithness
ELGINSHIRE	Average; good	Average; good	Average; good	Average; very good	Under; good	Over; very good	Over; very good	Average; very bad	.....	Wm. Ogg, Duffus House Gar- dens, Elgin
	Over	Average	Under	Under	Over	Over	Over bad	Average	.....	D. Cunningham, Darnaway Castle Gardens, Forres
ORKNEY.....	Over; good	Average; good	None	Average; good	Over; good	None	Average; good	Under; good	.....	Thomas Macdonald, Balfour Castle Gardens, Kirkwall
ROSS-SHIRE	Over good	Under	Under; good	Under; good	Average; good	Under	Average; very good	Average; good	.....	William Minty, The Gardens, Ardross Castle, Alness
SUTHERLAND.....	Average	Under	Average	Average	.....	.....	Average; good	Average	Average	D. Melville, Dunrobin Castle Gardens, Sutherland
1, Scotland, E.										
ABERDEENSHIRE.....	Under	Under	Average	Under	.....	.....	Average	Average	.....	John Forrest, The Gardens, Haddo House, Aberdeen
	Average; good	Under; good	Under; good	Average; good	.....	Under; bad	Average; good	Average; good	.....	James Grant, Rothie Norman Gardens
	Average; good	Under	Under; bad	.....	.....	.....	Average; good	Under; good	.....	John Brown, Delgaty Castle Gardens, Turiff
	Average; very good	Average	Very good	Average; good	.....	Average; good	Average; very good	Very good	.....	Simon Campbell, Fyvie Castle Gardens, Aberdeen
	Average; good	Under	Bad	Good	.....	.....	Average	Over	.....	John M. Troup, The Gardens, Balmoral Castle
BANFFSHIRE	Average	Under	Average	Over; good	.....	.....	Average; good	Average; good	.....	William Jamieson, The Gardens, Ballindalloch Castle, Ballin- dalloch
	Under	Under	Under	Average; good	Average; bad	Average	Average; very good	Over; very good	.....	J. Fraser Smith, Cullen Gar- dens, Cullen
BERWICKSHIRE.....	Average; good	Under	Average; good	Average; good	Average; good	Average; good	Average; good	Average; good	Under	Jas. Gemmell, Ladykirk Gar- dens, Norham-on-Tweed
	Over; very good	Under; good	Average; good	Average; good	.....	.....	Over; very good	Average; very good	.....	Wm. Cairns, The Hirsell Gar- dens, Coldstream
	Over; good	Under; good	Average; good	Over; very good	Over; good	Over; very good	Over; very good	Over; good	.....	James Ironside, Blackadder Gardens, Edrom
CLACKMANNAN- SHIRE	Average; good	Under; good	Under; good	Under; very good	.....	.....	Average	Average; very good	.....	William Nicholson, Cowden Castle Gardens, Dollar
EAST LOTHIAN	Average; good	Under; good	Average; very good	Over; small	Average; small	Average; very good	Over; good	Over; small	.....	R. P. Brotherston, Tynning- hame Gardens, Prestonkirk
FIFESHIRE	Under	Under	Under	Average, but small	.....	Under	Over; very good	Average; good	.....	William Henderson, Balbirnie Gardens, Markinch
	Average; good	Average; good	Under; good	Average; very good	Under; good	Average; good	Under; good	Average; good	.....	William Williamson, Tarvit, Cupar, East Fife
FORFARSHIRE	Average	Under	Under	Over	.....	.....	Average	Over	.....	W. McDowall, Brechin Castle Gardens, Forfarshire
	Under; good	Under; good	Under; good	Average; very good	Average; good	Under; bad	Average; good	Average; very good	.....	Thomas Wilson, Glamis Castle Gardens, Glamis
	Under	Under	Under	Under	.....	Under	Average; very good	Average; very good	.....	William Alison, Seaview Gar- dens, Monifieth
KINCARDINESHIRE.....	Average	Under	Under	Average; good	.....	Under	Over	Average; good	.....	William Knight, The Gardens, Fasque, Lawrencekirk
KINROSS.....	Under; good	Under; good	Under; bad	Average; good	.....	.....	Average; good	Under	.....	John Fortune, Blair Adam Gar- dens, Blair Adam
MIDLOTHIAN	Average very good	Average; very good	Average; very good	Over; extra fine	Average; very good	Over; extra fine	Average; very fine	Average; very fine	Average; good	Malcolm Dunn, The Palace Gardens, Dalkeith
	Average; good	Under	Under	Average	Average	Average	Average	Average; over	Under	D. T. Fish, 12, Fettes Row, Edinburgh
PEEBLESSHIRE	Over; very good	Under	Over; very good	Average	.....	.....	Over; very good	Over; good	Over	William Macdonald, Cardrona Gardens, Peebles
PERTHSHIRE	Under; good	Under	Under; good	Average; good	Over; very good	Over; very good	Average; over	Average	.....	J. Farquharson, Gardens, Kin- fauns Castle, Perth
	Average	Under	Under	Over, but small in size	None	None	Over; good	Average; good	None	John Robb, Drummond Castle Gardens, Crieff
	Average	Average	Under	Over, but stoned badly	.....	.....	Over	Average; good	.....	George Croucher, Ochtertyre, Crieff
	Average; good	Under	Under	Average; good	.....	Under; good	Average; very good	Average; very good	.....	James Ewing, Castle Menzies, Aberfeldy
	Average; very good	Under; good	Under; good	Average; very good	Under; bad	Average; very good	Over; very good	Under; good	.....	Thos. Lunt, Keir Gardens, Dunblane
	Over; very good	Average; good	Under; good	Average; very good	Average; good	Under; good	Average; good	Over; very good	Under; good	A. Mackinnon, Seone Palace Gardens, Perth
SELKIRKSHIRE	Over; good	Under	Under	Average	None outside; inside average good	Under	Over	Average	.....	James Hunter, The Gardens, Kings Knowes, Galashiels
	Average; good	Under	Average; good	Average	Under	.....	Average	Over	.....	Colin Turner, Sunderland Hall Gardens, Selkirk
WEST LOTHIAN	Average; bad	Average	Average	Good	Bad	Very good	Good	Good	Bad	James Smith, Hopetoun Gar- dens, South Queensferry
6, Scotland, W.										
ARGYLLSHIRE	Average	Average	Under	Average; good	.....	.....	Average; good	Average	.....	G. Taylor, Castle Gardens, Inverary
	Average; good	Under; good	Under; good	Average; good	Average; very good	.....	Over; very good	Over; very good	.....	D. S. Melville, Poltalloch Gardens, Lochgilphead
	Average; good	Average	Over; very good	Average; good	.....	.....	Over; very good	Average; good	Good	Henry Scott, Torloisk, Aros, Isle of Mull
AYRSHIRE	Average; good	Under; good	Average; good	Average; very good	.....	Average; good	Average; very good	Under; bad	Under	Daniel Buchanan, Bargany Gardens, Girvan
	Under; bad	Under; bad	Under; bad	Average; good	.....	Bad	Average; good	Good	.....	Thomas Simpson, Hunterston, West Kilbride
DUMBARTONSHIRE.....	Average; good	Under; good	Under; very good	Average; good	Under; bad	Under bad	Over; good	Average; good	Under; bad	George McKay, The Gardens, Balloch Castle, Balloch
DUMFRIES	Under	Under	Average; good	Average; good	.....	.....	Over; very good	Average; good	.....	David Inglis, Drumlanrig Castle, Thornhill

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
6, Scotland, W.										
DUMFRIES	Under; good	.....	.....	Under; bad	.....	Under; good	Average; good	Under; good	.....	John Urquhart, Hoddon Castle Gardens, Ecclefechan
	Under	Under; bad	Under	Average; very good	.....	.....	Average; very good	Average; very good	.....	R. Wishart, The Gardens, Burnfoot, Langholm
	Average; good	Average; good	Over; very good	Average; good	Under; good	Under; good	Average; very good	Over; very good	Average; good	John Mackinnon, Terregles, Dumfries
LANARKSHIRE	Average; good	Under; good	Under; good	Average; good	Under; bad	.....	Average; very good	Average; very good	.....	James Miller, Castlemilk Gardens, Rutherglen
RENFREWSHIRE	Average	Under	Average	Average	Under	.....	Average; good	Average; good	.....	John Methven, Blythswood Gardens, Renfrew
	Average	Under	Under	Under	.....	.....	Under	Under; good	.....	Thomas Lunt, Ardgowan Gardens, near Greenock
	Under; good	Under	Under; good	Average; good	.....	.....	Average; good	Over; very good	.....	Wm. Hutchinson, Eastwood Park, Giffnock
STIRLINGSHIRE	Average; good	Under; good	Under; good	Average; good	.....	Under	Over; good	Average; good	Average	Alexander Crosbie, Buchanan Castle Gardens, Drymen
	Under	Average	Under	Average; good	.....	.....	Over; very good	Over; very good	.....	James Masterton, The Gardens, Craigend Castle, Milngavie
	Average; good	Under	Average	Average; good	.....	Under	Over; very good	Average; good	.....	M. Temple, Carron House, Falkirk
WIGTONSHIRE	Over; good	Under; good	Under; good	Under; bad	Under; bad	.....	Over; very good	Average; good	.....	John Bryden, Dunragit Gardens, Dunragit
	Over; good	Under; good	Average; very good	Over; good	Average; very good	.....	Over; very good	Average; good	.....	F. Tilbury, Penninghame, Newton Stewart
	Average	Average	Under	Average	Under; bad	Under	Average; good	Under	Under	James Day, Galloway House Gardens, Garliestown
ENGLAND—										
2, England, N.E.										
DURHAM	Under	Under	Under	Under	Average	.....	Average	Average	Under	Robt. Draper, Seaham Hall, Seaham Harbour
	Average; good	Average; good	Average; good	Over; very good	.....	Over; very good	Over; good	Over; good	.....	James Noble, Woodburn Gardens, Darlington
NORTHUMBERLAND	Under; good	Average; good	Under; good	Average; good	Under	Average; good	Over; good	Over; good	.....	George Harris, The Castle Gardens, Alnwick
	Under; good	Average; good	Under; bad	Average; good	Average	Average; good	Over; very good	Under; good	.....	Geo. H. Ackroyd, Howick Gardens, Lesbury, R.S.O.
YORKSHIRE	Average	Under	Under	Bad	Average; good	Over; good	Over good	Average	Bad	A. E. Sutton, The Gardens, Castle Howard, Welburn, York
	Over; good	Over; good	Under; bad	Average; good	Over; good	Over; good	Over; good	Over; good	.....	John McClelland, Ribston Hall, Wetherby
	Average	Under	Under	Average	Average	Under	Average	Average; very good	.....	Bailey Wadds, Birdsall, York
	Good	Average	Average	Average	Average	Good	Over	Good	Average	William Culverwell, Thorpe Perrow, Bedale
	Under; good	Under	Under	Under	.....	Average	Over; good	Over; good	.....	George Batley, The Gardens, Wentworth Castle, Barnsley
	Under	Under	Under	Under	.....	.....	Good	Good	.....	J. Simpson, Wortley, Sheffield
	Average	Average	Under	Average	None outside	Over	Over	Under	.....	J. Easter, Nostell Priory Gardens, Wakefield
	Average	Under	Bad	Average	.....	.....	Average; very good	Average	.....	Jno. Snell, Elmet Hall Gardens, Leeds
	Average; good	Under; good	Under; good	Over; very good	Average; good	Average; good	Over; very good	Average; good	Average; good	John Allsop, The Gardens, Dalton Hall, Hull
	Over; very good	Under; good	Under; bad	Under; only Morellos grown	Under; good	Over; good	Average; good	Under; good	Average; good	Wm. Chuck, The Gardens, Brodsworth Hall, Doncaster
	Average; good	Under; good	Average; good	Over; good	Over; good	Over; very good	Over; very good	Over; very good	Under	S. Keepence, Thirkleby Park, Thirsk, Yorkshire
	Under; fair	Under; fair	Under; fair	Under; bad	.....	Average; good	Over; very good	Average; very good	.....	J. P. Leadbetter, Tranby Croft Gardens, Hull
	Under; good	Under; good	Under; good	Average; good	Average; good	Under; good	Over; very good	Average; very good	.....	J. S. Upex, Wigganthorpe, York
	Over; good	Average; good	Under; bad	Average; bad	Average; good	Under; bad	Over; very good	Average; bad	Under	Chas. Shaw, Asket Hill Gdns., Roundhay, Leeds
	Under	Under	Under; bad	Average	.....	Under	Average	Average	.....	J. Hughes, Wentworth Woodhouse Gardens, Rotherham
3, England, E.										
CAMBRIDGESHIRE	Under	Bad	Under	.....	.....	.....	Very good	Average	Good	W. C. Smythe, Upwell House Gardens, Wisbech
	Average; good	Under; good	Under; good	Under; good	Average; good	Average; good	Over; good	Average; good	Average	J. Hill, Babraham, Cambridge
	Average	Bad	Average	Bad	Average	Average; very good	Currents over; Gooseberries bad	Over; very good	Under	A. Burgess, Wimpole Hall Gardens, Royston
	Under; good	Average; good	Average; good	Average; bad	Average; good	Over; good	Over; good	Over; good	Average; good	Wm. Henry Gascoigne, The Gardens, Croxton Park, St. Neots
ESSEX	Average; good	Under; good	Under	Under	Average; good	Average; good	Over; good	Average; good	Under	Henry Lister, Easton Lodge, Dunmow
	Under; bad	Under; bad	Average; good	Average; very good	Average; good	Under; good	Over; good	Over; good	Under; good	William Plester, Elsenham Hall Gardens, Stanstead
	Under	Average; good	Under; bad	Average; very good	Average; very good	Average; good	Over; very good	Under	Average	Ernest Hill, The Gardens, Belmont Castle, Grays
	Average; very good	Under; bad	Average; good	Average; good	Over; very good	Over; very good	Over; very good	Over; very good	Under; bad	William J. Piper, Hylands Park, Chelmsford
LINCOLNSHIRE	Average	Under	Under	Average	.....	Under	Over; good	Over; very good	.....	H. Vinden, Harlaxton Manor, Grantham
	Average	Under	Under	Average	.....	Average	Average	Average	Under	J. Rowlands, Manor Gardens, Bardney, near Lincoln
NORFOLK	Under; bad	Under; good	Under; good	Under; bad	Average	Average; good	Over; very good	Average; good	Under	H. Batchelor, Catton Park Gardens, Norwich
	Under	Under	Under	Under	.....	Under	Very good	Average	Small Nuts, good	F. Lee, Lynford Hall, Mundford
	Very good	Good	Under	Good	Very good	Good	Very good	Good	Under	William Allan, Gunton Park, Norwich
	Average	Under	Bad	.....	Under	Under	Average	Average; very good	Average; no Walnuts	Jas. Clarke, Shadwell Court Gardens
	Average; good	Under; good	Average; good	Average; good	Average; good	Under; bad	Average; good	Average; bad	Under; good	F. Topham, Ormesby Hall Gardens, East Ormesby, Great Yarmouth
SUFFOLK	Average; good	Average; good	Average; good	Average; good	Under	Average	Over; very good	Over; good	Average	Thos. Williams, The Gardens, Falmouth House, Newmarket
	Average; good	Under; bad	Average; good	Average; very good	Average; good	Under; good	Over; good	Average; very good	Average	B. Marks, Hardwicke House, Bury St. Edmunds
	Under	Under	Under	Under	Average	Average	Average	Average	Under	J. Wallis, Orwell Park Gardens, near Ipswich
	Over; good	Under; good	Average; very good	Average; very good	Under; good	Average; good	Over; good	Under; good	Under	George Eden, Henham Gardens, Wangford

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
3, England, E.										
SUFFOLK	Average; good	Average; good	Over; good	Over; good	Under	Average	Over; good	Under	Under	W. Messenger, Woolverstone Park Gardens, Ipswich
	Average; good	Over; very good	Under	Under	Under	Over; good	Over	Over; very good	Under	H. Fisher, The Gardens, Flix- ton Hall, Bungay
4, Midland Counties.										
BEDFORDSHIRE	Under	Under	Under	Average	Average	Average	Average	Average; good	Under	Charles Turner, Cranfield Court, Bletchley
	Average; good	Under; very thin	Under; scarce	Average; good	Under	Under	Average; good	Average; very good	Under; very thin	G. R. Allis, Old Warden Park, Biggleswade
	Good	Under	Bad	Under	Under	Under	Good	Very good	Under	H. W. Nutt, Flitwick, Ampt- hill
	Average	Under	Average	Under	Average	Under	Average; good	Average; good	Average	Geo. H. Maycock, Luton Hoo Gardens, Luton
	Over; good	Under	Under	Average	.....	.....	Over; good	Average; good	Average	Thos. Hedley, The Gardens, Putteridgebury, Luton
	Under; bad	Under	Under; bad	Average; good, except Morellos	Average; good	Average; good	Over; good	Over; good	Average	G. Ford, West Park Gardens, Amphthill
BUCKINGHAMSHIRE	Good	Good	Bad	Average	Good	Bad	Good	Good	Average	James Wood, Hedsor Park, Bourne End
	Under	Very poor	Average	Average; good	Over; good	Under	Average; good	Average; very good	Over	C. Herrin, Dropmore, Maiden- head
	Under; trees blighted	Under	Under	Under; bad	Average; good	Average; good	Over; good	Over; good	Over; good	J. Smith, Mentmore, Leighton Buzzard
	Average; bad	Average; good	Under	Over; good	Over; good	Under	Over; good	Average; good	Average; good	Geo. Thos. Miles, Estate Office, High Wycombe
	Under	Under	Under	Average	.....	.....	Over	Average	Average	W. Hedley Warren, The Gar- dens, Aston Clinton
	Average	Under	Under	Average	.....	Under	Over	Over	.....	J. Jaques, Waddesdon, Ayles- bury
	Average	Under	Average	Average	Peaches good	Under	Good	Good	Good	W. Walters, Bulstrode Gardens, Gerrard's Cross
CHEESHIRE	Under	Under; good	Under	Average; good	Under; bad	Under	Average; good	Average; good	.....	William C. Breese, Moreton Hall, Congleton
	Under	Average	Under	Morellos; over	.....	Under	Currants and Gooseberries over	Under	.....	C. Wolley Dod, Edge Hall, Malpas
	Average	Average	Under	Over	.....	.....	Over	Over	Under	William Kipps, Walton Lea, Warrington
	Under	Average	Average; ex- cept Damsons	Average	Under	Under	Over; good	Average; good	Under	E. Severn, The Gardens, Com- bermere Abbey, Whitechurch, Salop
	Average; good	Average; good	Over; Dam- sons under, bad	Over; good	Average; good	Under; good	Over; good	Under	Under	Charles Flack, Cholmondeley Castle Gardens, Malpas
	Average	Average	Under	Over	Under	Average	Over	Under	Average	Wm. Whitaker, Crewe Hall, Crewe
	Average; good	Under	Under	Under	.....	.....	Over; good	Average; good	.....	Robt. Mackellar, Abney Hall Gardens, Cheadle
DERBYSHIRE	Under; good	Under	Under	Under	.....	.....	Under; good	Under; bad	Under	E. Wilson, Hardwick Hall Gar- dens, Chesterfield
	Under; good	Under; good	Under	Over; good	.....	Under	Average; good	Over; very good	.....	W. Chester, The Gardens, Chatsworth, Chesterfield
	Under; bad	Under; bad	Under; bad	Under; bad	.....	Under; bad	Under; bad	Average; very good	Under; bad	Wm. Elphinstone, Shipley Hall, Derby
	Under	Under	Under	Under	.....	Under	Average; good	Average; good	Under	Thomas Keetley, The Gardens, Darley Abbey, Derby
HERTFORDSHIRE	Over; good	Under; good	Good	Average; very good; Morel- los over	Over; very good	Under; do not grow well here	Over; very good	Over; very good	Filberts aver- age; Walnuts under	F. Ringham, The Gardens, Wrotham Park, Barnet
	Under	Under	Under; bad	Under; bad	Average; good	Average; good	Average; good	Average; good	Under	C. Deane, Cossibury Gardens Watford
	Over; good	Under; good	Under	Under	Average	Average; good	Over; good	Over; good	Under	William Garman, Frythesden Gardens, Berkhamsted
	Average; good	Under; good	Under; bad	Under; bad	Under; bad	Average; good	Over; very good	Over; very good	Average; good	Edwin Beckett, Aldenham House Gardens, Elstree
	Average; good	Under	Over	Average	Over	Over	Over	Over; very good	Under	Thomas Nutting, The Gardens, Childwickbury, St. Albans
	Over; very good	Average; good	Average; good	Average	Average; good	Under; good	Over; very good	Over; very good	Filberts and Cobs very good; Walnuts falling	J. Turk, Ponfield Gardens, Little Berkhamsted
	Under	Under	Under	Under	.....	Under	Average	Average; good	Under	Edwin Hill, The Gardens, Tring Park, Herts
	Over; very good	Average; good	Average	Over; good	Average	Over; good	Over; good	Over; very good	Under	C. E. Martin, The Hoo Gardens, Welwyn
LEICESTERSHIRE	Under	Bad	Bad	Under	.....	Under	Under	Average	.....	Geo. Milford, Egerton Lodge, Melton Mowbray
	Under	Good on walls	Under	Under	Average	Over; good	Average	Over; very good	Under	William Silk, Rolleston Gar- dens, Leicester
	Under; good	Under; good	Under; good	Average; good	Average; very good	Over; good	Average; good	Average; good	Walnuts under	D. Roberts, Prestwold Gar- dens, Loughborough
	Under; good	Under; good	Under; good	Under; bad	Average; very good	Average; good	Over; good	Over; very good	Under	W. H. Divers, Belvoir Castle Gardens, Grantham
	Under	Average; good	Under	Average; good	Under	Under	Over; good	Average; good	.....	Alfred Hamshire, The Gardens, Beaumanor Park, Lough- borough
NORTHAMPTON- SHIRE	Under; good	Under; good	Average; good	Average; good	Average; bad	Average; good	Over; very good	Over; very good	.....	H. Kempshall, The Gardens, Lampport Hall, Northampton
	Average; good	Under; good	Average; bad	Average; bad	Under; good	Average; good	Over; good	Average; good	Under; good	H. Turner, Fineshade Abbey Gardens, Stamford
	Over; good	Average; good	Under; good	Average; good	Under	Average; very good	Over; very good	Over; very good	Average; good	P. McGreadie, Wakefield Lodge Gardens, Stony Stratford
	Average	Under	Under	Under	.....	Under	Average	Average	Under	W. S. Miller, Whittlebury, Tow- cester
NOTTINGHAMSHIRE	Under; bad	Under; good	Under; good	Under; good	Average; good	Average; very good	Average; good	Under; good	Average; good	Amos Parr, Holme Pierrepont Nottingham
	Under	Under	Under	Over; good	Over; very good	Average; good	Over; good	Over; very good	Under	J. Lyon, Home Farm, Ossing- ton
	Average	Average	Bad	Bad	.....	Half crop	Plentiful	Very good, but late	.....	A. Henderson, Thoresby Gar- dens, Ollerton
	Under	Under	Under	Average	Under	Under	Good	Good	.....	A. McCulloch, Newstead Abbey Gardens, Nottingham
OXFORDSHIRE	Average; good	Average; good	Average; good	Under; bad	Average; good	.....	Over; good	Over; very good	Over; good	George Stanton, Park Place Gardens, Henley-on-Thames
	Under; good	Under	Average	Average	.....	.....	Over; good	Over; very good	Average; Walnuts under	A. G. Nichols, 45, Essex Street, Oxford, late of Nuneham Park Gardens
	Average	Under	Under	Average; good	Under	Under	Over; good	Over; good	Under	A. J. Long, The Gardens, Wyfold Court, Reading

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
4, Midland Counties.										
OXFORDSHIRE	Average; very good	Average; very good	Average; very good	Under; bad	Under	Under; good	Over; very good	Average; very good	Average; good	J. A. Hall, The Gardens, Ship-lake Court, Henley-on-Thames
RUTLANDSHIRE	Average; very good	Under; good	Under; bad	Average; good	Average; good	Over; good	Average; good	Under; good	Under	Geo. Drabble Ketton Hall Gardens, Rutland
	Under; good	Under; good	Under; bad	.....	.....	.....	Average; good	Average; good	Under	William T. Kaines, The Gardens, Cold Overton Hall, Oakham
SHROPSHIRE	Under; good	Over; good	Under; bad	Average; good	Average; good	Under; good	Average; good	Over; very good	Under; good	James Loudon, The Quinta Gardens, Chirk, Ruabon
	Average; good	Under	Under	Average; good	Average; bad	Under	Average; good	Over; very good	Over; good	A. S. Kemp, Broadway, Shifnal
	Average; good	Under	Under	Average	Under	.....	Over; good	Over; good	Average	Wm. Weeks, The Gardens, Cheswardine House, Market Drayton
	Under; good	Under; bad	Under; good	Under; bad	Under	Average; good	Very good	Very good	Good	J. Hopwood, The Gardens, Hawkstone, Shrewsbury
	Under	Under	Average; good	Average	Average	Average; good	Average; good	Average; good	Average	G. Pearson, Attingham Gardens, Shrewsbury
	Under	Under	Under	Average	Average	Over	Over	Average; good	Over	D. Owles, The Gardens, Apley Castle, Wellington, Salop
STAFFORDSHIRE	Average; good	Average; good	Average; very good	Under	.....	Average; good	Under	Over; very good	Average; good	T. Bannerman, Blithfield Gardens, Rugeley
	Under	Under	Under	Good	.....	Average	Good	Good	Good	E. Gilman, Alton Towers Gardens, Cheadle
	Under	Under	Under	Under	Good	Good	Over; good	Over; good	Average	W. Halliday, Patshull Gardens, Wolverhampton
	Under	Under	Under	Average	Good	Good	Average	Good	Average	G. H. Green, Envile Gardens, Stourbridge
	Under; good	Under; good	Under; bad	Average; good	Under; bad	Under; good	Average; very good	Average; very good	Under; bad	Geo. Woodgate, Rolleston Hall Gardens, Burton-on-Trent
	Under; bad	Under; good	Under; bad	Under; bad	.....	Under; bad	Average; very good	Average; good	.....	John Wallis, Keele Gardens, Newcastle, Staffordshire
	Under; good	Under; good	Under; good	Over; good	Average; good	Average; good	Over; very good	Average; very good	Average; good	J. Wm. Brown, The Gardens, Middleton Hall, Tamworth
WARWICKSHIRE	Under; bad	Under; bad	Under; bad	Under; good	Average; good	Average; good	Average; good	Average; good	Under	James Rodger, The Gardens, Charlecote Park, Warwick
	Under	Under; bad	.....	Average; good	.....	Under; good	Plentiful	Under	Over	W. Miller, Combe Abbey, Coventry
	Average; good	Under; bad	Under; bad	Over; good	Average; good	Average; good	Over; good	Over; very good	Average	H. T. Martin, Stoneleigh Abbey Gardens, Kenilworth
	Average; good	Average; good	Under; good	Under; bad	Average; good	Under; bad	Average; good	Average; very good	Average; good	A. D. Christie, Ragley Gardens, Alcester
	Under; good	Under; good	Average; good	Under; bad	Under; bad	Under; good	Over; very good	Average; very good	.....	W. Masters, Shuckburgh Gardens, Daventry
5, Southern Counties.										
BERKSHIRE	Average; good	Under; very good	Under; good	Over; very good	Average; good	Over; good	Over; good	Over; very good	Under; good	Owen Thomas, Royal Gardens, Windsor
	Average	Under	Under	Average	Average	Average	Average	Average	Average	Robert Fenn, Sulhampstead, near Reading
	Average	Average	Under	Average	Average	.....	Over; very good	Average; very good	Under	James Strachan, The Gardens, Rosehill House, Henley-on-Thames
	Average; small	Under	Under	Under	Under	Average	Average	Average	Under	J. Howard, Benham Gardens, Newbury
	Under	Under; bad	Under	Average	Average	Under	Over; good	Over; good	Under	T. Turton, Maiden Erlegh Gardens, Reading
	Average	Under	Under	Under	Average	Under	Over; good	Over; very good	Under	Wm. Fyfe, Lockinge Gardens, Wantage
	Over; very good	Average	Under	Average; good	Under	Over; good	Over; very good	Over; very good	.....	Fred J. Thorne, Sunningdale Park, Sunningdale
	Under; good	Under; bad	Average; good	Under; good	Over; very good	Bad	Over; very good	Over; very good	.....	F. Cole, Swallowfield Park, Reading
	Average; good	Under	Under	Morellos good	Under	Under; bad	Average; very good	Good	.....	Frank Lowe, The Gardens, Easthampstead Park, Wokingham
DORSETSHIRE	Under; good	Under; good	Average; good	Under; good	.....	Under; good	Over; very good	Over; very good	Average	Thos. Denny, Down House Gardens, Blandford
	Average	Under	Under	Under; good	Under	Average	Average; good	Average; good	Over	G. W. Goblin, Onslow, Wimborne, Dorset
	Under	Under	Under	Under	Average	Under	Over; good	Average; good	.....	John Powell, Ilington Gardens, Dorchester
HAMPSHIRE	Under; good	Average; very good	Under; good	Average; good	Average; very good	Average; good	Over; very good	Over; very good	Under; good	Samuel Heaton, Horticultural Instructor, The Villas, Newport, I.W.
	Average	Under	Under	Average	Average	.....	Very good	Average	Very good	J. Wasley, Sherfield Manor Gardens, Basingstoke
	Average; good	Under; fairly good	Under; bad	Under; fair	Average; good	Under	Average; good	Over; very good	Average	Wm. Pope, Castle Gardens, Highclere, Newbury
	Under	Under	Average	Average	Under	Under	Over; good	Over; good	Under	Wm. Smythe, The Gardens, Basing Park, Alton
	Average	Over	Under	Average	Average	Under	Over; good	Over; very good	Average	J. W. McHattie, Strathfield-saye, Mortimer, R.S.O.
	Under; very good	Average; very good	Under; bad	Morellos under; very good	Over; very good	Over; very good	Over; very good	Under; very good	Under; bad	Arthur Lee, Palace House Gardens, Brockenhurst
	Under; small	Average; good	Average	Under	Over; small	Under	Over; good	Over; very good	Over	J. Bowerman, Hackwood Park, Basingstoke
KENT	Average; good	Average; good	Average; very good	Average	Average; good	Average	Average; good	Average; very good	Average; under	Walter Jarman, Preston Hall Gardens, Aylesford
	Average; good	Under; poor	Average; good	Under; poor	Average; good	.....	Over	Average; good	Average	Geo. Woodward, Barham Court Gardens, Maidstone
	Over; good	Over; good	Average; good	Under	Average; good	Over; very good	Over; very good	Over; very good	Under	Henry Elliott, The Gardens, Wildernes, Sevenoaks
	Under; good	Under	Average; good	Under; bad	Average; good	.....	Average; good	Over; good	Under	Fred. Smith, Loddington, Maidstone
	Under; bad	Under; bad	Under; bad	Average	Under; bad	.....	Over; very good	Over; good	Under	Geo. Abbey, jun., Avery Hill, Eltham
	Under	.....	Much under	Half crop	Average	Average	Good	Very good	Under	Geo. Bunyard, Royal Nurseries, Maidstone
	Over; good	Under	Average	Average; good	Over; good	Under	Average; good	Over; good	Under	H. Markham, Northdown, Margate
	Over	Average	Average	Under	Average	Under	Over; excepting Black Currants	Over; good	Filberts under Walnuts over	Geo. Hutt, Lullingstone Castle, Dartford
	Average	Under	Under	Average	Average	Average	Over; good	Over	.....	F. Moore, Gardener, Blendon Hall, Bexley
	Under; good	Under; bad	Over; good	Under; bad	Average; good	.....	Over; very good	Over; very good	Under	Wm. Lewis, East Sutton Park, Maidstone
	Under; bad	Under	Over	Under	Average	.....	Average	Average; good	Under	Geo. Fennell, The Gardens, Fairlawn, Tonbridge

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
Southern Counties.										
KENT	Under; bad	Under; bad	Average; good	Under; good	.....	.....	Over; good	Over; good	Under	Champion Bros., Mereworth, Kent; Boro' and Covent Garden Markets, London
MIDDLESEX	Average; good	Under; good	Under; bad	Average; very good	Under; good	Under; good	Average; good	Over; very good	Under	Geo. Wythes, Syon House Gar- dens, Brentford
	Average	Under	Under	Average; good	Average	Average	Average; good	Average; very good	.....	William Bates, Cross Deep Gardens, Twickenham
	Over; very good	Under; bad	Average	Under	Under; bad	Under	Under	Under	Under; bad	S. T. Wright, R. H. S. Gardens, Chiswick
	Average; good	Thin	.....	Fair	Good	Fair	Good	Good	Average	W. Watson, Harefield Place, Uxbridge
	Average; good	Under; good	Under; bad	Over; very good	Average; very good	.....	Average; very good	Over; very good	.....	James Hudson, Gunnersbury House, Acton
	Bad	Under; bad	Under	Under	Average	Under	Over	Average; very good	Average	Robert H. Cronk, The Gardens, Cranford House, Hounslow
	Under	Under	Under	Average	Average	Average	Average; very good	Average	.....	W. Rapley, Harrow Weald House, Harrow Weald
SURREY	Under	Under; much	Under	Average; good	Average	Under	Average; good	Average; good	Average; good	Alexander Dean, Kingston-on- Thames
	Over; good	Under; good	Average; good	.....	.....	.....	Over; good	.....	.....	James Walker, Ham Common, Surrey
	Over; good	Average; good	Average; good	Over; good	Average; good	Under; very good	Over; fair crop; bad	Over; very good	Under	E. Burrell, Claremont Gardens, Esher
	Over; very good	Average; good	Under; good	Average	.....	.....	Average; good	Average; very good	.....	J. F. McLeod, Dover House, Gardens, Roehampton
	Average	Under	Average	Under	Over	Average	Average; very good	Average; good	Under	Thomas Osman, The Gardens, Otterahaw Park, Chertsey
	Average	Under	Under	Morellos average	.....	.....	Average	Average; good	Under	C. J. Salter, Woodhatch Lodge Garden, Reigate
	Under	Under	Bad	.....	.....	.....	Average	Very good	Good	William Bain, Burford, Dorking
	Under	Under	Under	Bad	Very good	Bad	Very good	Extra good	Under	J. Miller, Ruxley Lodge, Esher
	Average	Under	Average	Over; good	Under	Over; good	Over	Over good	Over	George Kent, Norbury Park Gardens, Mickleham
	Average; good	Average; good	Under; bad	Under	.....	Over; very good	Average; good	Over; good	Average	W. E. Humphreys, The Grange, Hackbridge
	Average; very good	Under; good	Average; very good	Under; good	Over; very good	Average; good	Over; very good	Average; very good	Under; good	G. Halsey, Riddings Court Gardens, Caterham
SUSSEX	Under	Under	Under	Average	Over	Average	Over	Over	Over	F. Geeson, Cowdray, Midhurst
	Average; good	Average	Over; very good	Under	Under; bad	Average	Over; very good	Over; good	Under	A. Wilson, Eridge Castle Gar- dens, Tunbridge Wells
	Average; good	Under	Under	Under	Average; good	.....	Average; good	Over; very good	Average	Alex. Reid, jun., Possingworth Gardens, Cross-in-Hand, Hawkhurst
	Average	Under	Under	Under	Average	Under	Over; good	Over; very good	Average	E. Burbury, Arundel Gardens
	Average	Under; bad	Average	Under	Average; good	Average; good	Over; very good	Average; good	Under	W. H. Smith, West Dean Park Gardens, Chichester
	Under	Bad	Bad	Bad	Good	.....	Very good	Very good	Very good	C. Allen, Worth Park Gardens, Crawley
	Average; very good	Average; under	Average; good	Over; very good	Over	.....	Over; good	Average; very good	Average	W. Brunson, Brambletye Gar- dens, East Grinstead
	Under	Under	Over	Over	Over	Average	Average	Average	Under	Richard Parker, Goodwood, Chichester
	Average	Over; very good	Average	Over; good	Under; bad	Under	Over; good	Average; good	Cobs and Fil- berts, average; Walnuts, under	George Grigg, Ashburnham Place, Battle
WILTSHIRE	Under; poor	Under	Average	Average	Average	Under	Over; good	Over; good	Average; good	H. C. Prinsep, Buxted Park Gardens, Uckfield
	Under	Under	Under	Under	Under	.....	Average; good	Average; good	.....	Josiah Trollope, Longleat Gar- dens, Warminster
	Under; bad	Under; bad	Under	Average	Over	Average	Average	Under	Average	F. Challis, The Gardens, Wilton House, near Salisbury
	Average; good	Under; good	Under; good	Under	Average; good	Average; good	Average; good	Average; good	.....	George Brown, Bowood Park, Calne
	Under; bad	Under	Under	Under	Average	Average; good	Average	Average; very good	Average	W. Nash, Badminton Gardens, Chippenham
	Under; good	Average; good	Average; good	Average; good	Under; good	Average; good	Over; very good	Average; very good	.....	E. F. Hazelton, The Gardens, Longford Castle, Salisbury
	Under	Average	Under	Average	Under	Under	Over; good	Average; good	Under	A. Rushant, Saverne Gardens, near Marlborough
7, England, N.W.										
CUMBERLAND	Over	Average	Under	Average	Not much grown	Not much grown	Over	Average	Average	Little & Ballantyne, Carlisle
	Average; very good	Over; good	Average	Average; good	.....	.....	Over; very good	Average; good	.....	W. J. S., Brayton Gardens, Carlisle
	Average	Average	Under	Average; Mo- rellos good	Average; very good	Average; good	Average; very good	Average; good	.....	Arthur Smith, Eden Hall Gar- dens, Langwathby
LANCASHIRE ..	Under	Under	Under	Average	Average; very good	.....	Over; very good	Average; very good	Over	W. Stainton, Graythwaite Hall Gardens, Ulverstone
	Under	Under	.....	Very few	.....	.....	Average	Average	.....	B. Barham, Croxteth Park Gar- dens, Liverpool
	Average; good	Under	Under; bad	Average; good	Average; good	.....	Over; very good	Over; very good	Under	B. Ashton, Lathom Park Gar- dens, Ormskirk
	Over; good	Under; good	Under; bad	Over; good	.....	.....	Over; very good	Average; good	.....	Wm. F. Roberts, The Gardens, Cuerden Hall, Preston
WESTMORELAND	Under	Under	Under	Average	.....	Under	Over	Over; very good	.....	Fredk. Clarke, Lowther Castle Gardens, Penrith
	Average	Average	Bad	Good	.....	.....	Good	Average	.....	Joseph Maxwell, Sizergh Gar- dens, Kendal
	Under; good	Under; bad	Under; good	Average; bad	Average; good	.....	Average; good	Average; good	.....	W. Gibson, The Gardens, Levens Hall, Milnthorpe
	Under	Under	Under	Under	.....	.....	Average	Over	Under	W. A. Miller, Underley Gar- dens, Kirkby Lonsdale
8, England, S.W.										
CORNWALL	Average; good	Average; good	Under	Average; good	Over; good	Average	Over; very good	Over; good	Average	W. H. Bennett, Menabilly, Par Station
	Average	Average	.....	Morellos over	Over	.....	Over	Over	.....	A. Mitchell, Tehidy Park, Cam- borne
	Under	Average; good	Under; good	Under	Average; good	.....	Over; good	Average; good	Average; good	Alfred Read, Port Elliot, St. Germans
	Under; good	Over; very good	Average; good	Average; good	Under	Under	Over; very good	Average; good	Average	Chas. Page, Boconnoc Gardens, Lostwithiel
	Average; good	Average; good	Under; bad	Under; bad	Average; very good	.....	Over; very good	Average; good	.....	William Sangwin, Trellisick, Truro
DEVONSHIRE ..	Average	Under	Average	Under	Under	Under	Over; good	Average; good	Under	James Enstone, 38, Temple Road, Exeter

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
8, England, S.W. EVONSHIRE	Average; good	Under; bad	Average; good	Average; good	Under; bad	Under; good	Over; good	Over; very good	Filberts, over; Walnuts, under	Andrew Hope, Prospect Park, Exeter
	Under	Under	Under	Average	Average	.....	Good	Good	.....	Geo. Baker, Membland, Newton Ferrers, Plymouth
	Average; good	Average; good	Average; very good	Over; very good	Under; good	Average; very good	Over; very good	Over; very good	Average; very good	James Mayne, The Gardens, Bicton, Budleigh Salterton
OUCESTERSHIRE	Under Over; very good Under	Under Under; good	Under Average; good	Under Under; bad	Under Average; good	Under Under; very good Under	Under; bad Over; very good Average	Over; very good	Average	John Garland, Killerton, Exeter G. W. Marsh, Arle Court, Chel- tenham
	Average	Under	Under	Average	Average; good	Under	Over; very good Average	Under; good	.....	Thomas Shingles, Tortworth, Falfield
	Under	Under	Average	Average	Under	Under	Average; good	Average	Over	Wm. Greenaway, Dodington Gardens, Chipping Sodbury
	Under	Under	Under	Average	Average	Under	Average	Average	Over; good	William Keen, Bowden Hall, near Gloucester
HEREFORDSHIRE ...	Under	Under	Under	Average; good	Average	Under	Over; good	Over; good	Over	John Sowray, Highnam Court, Gloucester
	Over; good	Average; good	Over; good	Average; very good; Mo- rellos rather thin	Under; bad	Average; very good	Average; good	Over; good	Average	Geo. Milne, The Gardens, Titley Court, Titley
	Average; good	Under; bad	Under; good	Over; good	Under; bad	Under; bad	Over; good	Average; good	Average; good	Thomas Spencer, Goodrich Court Gardens, Ross
MONMOUTHSHIRE	Average	Under	Under	Under	Under	Under	Over	Over	Average	John Watkins, Pomona Farm, Withington, Hereford
	Average; good	Under; good	Under; good	Average	Over; good	Average; good	Over; good	Over; very good	Average	John Lockyer, Pontypool Park Gardens
	Under	Under	Under	Under; good	.....	Under; good	Average; good	Average; good	Average	W. F. Woods, Llanfrechfa Grange Gardens, Caerleon
SOMERSETSHIRE	Under	Under	Under	Under	Under	Under	Average	Under	Under	Thos. Coomber, The Hendre Gardens, Monmouth
	Under	Under	Average	Average	Under	Under	Average	Average	Average	Samuel Kidley, Nynhead Court, Wellington
	Average; good	Under; bad	Average; good	Over; very good	.....	Average; very good	Average; good	Under; good	.....	William Hallett, Cossington House Farm, Bridgwater
	Over; good	Average; good	Average; good	Average; good	Average	Under; good	Average; good	Over; good	Average	John Crook, Forde Abbey, Chard
	Average; good	Under	Average	Average; good	Under; good	Average; good	Over; good	Over; good	Average	A. Young, Marston Gardens, Frome
WORCESTERSHIRE .	Under; bad	Under; good	Average; very good	Average; good	Average; good	Average; very good	Average; good	Average; very good	Average; good	Thomas Wilkins, Inwood House Gardens, Henstridge
	Average; very good Under	Average; very good Under	Under	Over; good	Average; good	Over; good	Average; good	Over; very good Over	.....	H. Russell, Hindlip, Worcester
	Over; good	Average; good	Average	Over	Average	Average	Over; good	Over; good	.....	William Crump, Madresfield Court Gardens, Malvern
	Average; good	Under; good	Average; good	Over; good	Over; good	Over; good	Over; good	Over; good	Average	John Masterson, Weston House Gardens, Shipston-on-Stour
WALES—										John Justice, The Nash Gar- dens, Kempsey, Worcester
ANGLESEY... ..	Under; very good	Average; very good	Under; very good	Under; very good	.....	.....	Over; good	Average; very good	.....	Arthur Young, Witley Court Gardens, Stourport
BRECONSHIRE	Average; good	Average; good	Under; bad	Average; very good	Average; very good	.....	Average; good	Average; very good	Average	K. Wright, Gardens, Plas Newydd, Llanfair, P. G.
	Under; bad	Under; bad	Under; bad	Under; very good	Average; very good	Under; very good	Average; very good	Average; very good	.....	C. Hibbert, Craig-y-nos Castle, Swansea Valley
	Under	Under	Under	.....	Average; good	Average; good	Over; good	Under	.....	Albert Ballard, Glanusk Park, Crickhowell
CARMARTHENSHIRE	Under	Under	Average	Average	Under	.....	Average	Average	Under	D. Clark, The Gardens, Clyso Court, Hay
CARNARVONSHIRE ...	Under	Under	Under	Under	Under	.....	Average	Average	.....	Lewis Bowen, Edwinsford, Llandilo
	Average	Under	Average	Over; good	.....	.....	Over; very good	Over; good	Average	Allan Calder, Vaynol Garden, Bangor
DENBIGHSHIRE	Average	Under	Under; very bad	Average; very good	Under; bad	Average	Over; very good	Average; good	Over; very good	T. Evans, Gwydyr Castle Gar- dens, Llanrwst
FLINTSHIRE	Under	Under	Bad	Under	Bad	Good	Average	Very good	Under	Walter Weir, Acton Park, Wrexham
GLAMORGANSHIRE...	Under; good	Average; good	Average; good	Over; good	Average; good	Average; good	Over; good	Over; good	Over	John Forsyth, Hawarden Cas- tle, Chester
	Under	Average	Average	Under	Under	.....	Average; very good	Average; very good	Average	Richard Milner, Penrice Castle Gardens, Swansea
MERIONETHSHIRE ...	Average	Average	Under	Under	.....	.....	Under	Average; good	.....	A. Blanchett, Dunraven Castle Gardens, Bridgend
MONTGOMERYSHIRE.	Under; good	Average; good	Under; bad	Over; good	Average; good	Under; good	Over; very good	Average; good	Average; good	J. Bennett, Estate Office, Rhug, Corwen
PEMBROKESHIRE ...	Under	Under	Under	Under	Average	.....	Average; good	Average; very good	Under	John Lambert, Powis Castle, Welshpool
	Under; bad	Under; bad	Under; bad	Average	Average	.....	Good	Good	Average	W. B. Fisher, Stackpole Gar- dens, Pembroke
	Much under	Much under	Under	Over	Very good	Average	Over	Under	Under	Geo. Griffin, Slebeck Park, Haverfordwest
IRELAND—										Samuel Dickson, The Gardens, Bullbrook, Norton
9, Ireland, N.										
ANTRIM	Under; bad	Under; bad	Average; very good	Average; good	.....	.....	Over; good	Average; very good	.....	Geo. Porteous, Garron Tower, Belfast
	Under	Under	Under	Under	.....	.....	Very good	Over	.....	George Walker, Tullymore Lodge, Broughsham
	Average; good	Average; good	Average; good	Under; good	.....	.....	Over; very good	Average; good	Average; good	X., The Gardens, Maghera- morne
CAVAN.....	Average	Under	Under	Average	.....	.....	Over	Over	.....	Edward Reilly, The Gardens, Castle Sanderson, Belturbet
	Average	Under	Under	Bad	Good	Under	Average	Good	Bad	John Christie, Lanesborough, Belturbet
DOWN	Over; very good	Under; good	Under; bad	Average; good	Under; good	Average; good	Over; very good	Under; bad	.....	Ed. Cole, Ballywalter Park Gar- dens
DUBLIN	Average	Good	Average	Good	Average	Under; good	Very good	Very good	Under	James Patterson, Malahide Castle Gardens, Malahide
	Over; very good	Under	Under	Under	Under	Average	Average	.....	.....	James Doran, Gardens, Clon- tarf Castle
	Over	Over	Average	Under	Under	Under	Over	Average	.....	G. Smith, Vice-Regal Gardens, Dublin
FERMANAGH	Average	Under	Under	Under	.....	.....	Abundant, but small	Abundant, but small	.....	R. Elworthy, The Gardens, Crom Castle, Newtown Butler
GALWAY.....	Under; good	Under; good	Over; very good	Under; good	Average; very good	.....	Over; very good	Average; very good	Average	J. C., The Gardens, Dunsandle Castle, Atheny

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
9, Ireland, N.										
GALWAY.....	Average	Average	Under	Abundant; very good	Under; very bad	.....	Abundant; very good	Over; bad	.. ..	James O'Toole, Pallas Gardens, Tynagh, Loughrea
LONGFORD	Under	Under	Average	Average	Average	Average	Very good	Very good	Average	John Rafferty, Castle Forbes, Newton Forbes
LOUTH	Average; good	Under; good	Under; good	Average; good	Average; good	Under; bad	Average; very good	Average; very good	.....	Chas. Pilgrim, The Gardens, Drumcar, Dunleer
MAYO.....	Under	Under	Under	Average	Average	Average	Average	Average	Under	John Tully, Milestown Castle, Bellingham
MAYO.....	Average; good	Average; good	Average; good	Under	Average; good	.....	Over; very good	Average; very good	Average	Patrick Connolly, Cranmore Gardens, Ballinrobe
MEATH.....	Under; bad	Under; bad	Average; good	Average; good	Under; bad	Under	Average; good	Under; bad	Under	Jas. Hounslow, Headfort Gar- dens, Kells
SLIGO	Average; good	Average; very good	Average; good	Average; good	Over; good	Average; good	Over; good	Over; good	Average; good	James E. Dawson, Lissadell Gardens
WESTMEATH	Average	Over; good	Under	Average; bad	Under	.....	Over; very good	Over average; very good	.....	Cyrus Moore, Markree Castle Gardens, Collooney
WICKLOW	Over; good	Average; good	.....	Average	Average	.....	Average; very good	Under	Average	Robert Anderson, Waterstown, Athlone
WICKLOW	Average; very good	Under; good	Average; good	Under; very good	Under; bad	Average; bad	Over; good	Average; good	Average; good	David Crombie, Powerscourt Gardens, Enniskerry
WICKLOW	Under; good	Under; good	Under; good	Average; good	.....	Average; good	Over; good	Over; good	Under	James Whytock, The Gardens, Coolattin, Shillelagh
10, Ireland, S.										
CLARE.....	Under	Under	Under	Average	Under	.....	Over	Average	Under	J. H. Carter, Dromoland Castle, Newmarket-on-Fergus
CLARE.....	Under	Under	Bad	Bad	Bad	.....	Good	Very good	Under	Wm. Clarke, Castlecrine, Six- mile Bridge
CORK	Average	Under	Average	Under	Under	.....	Average	Good	.....	C. Price, Mitchelstown Castle, Mitchelstown
KILDARE	Average	Under	Under	Under; Mo- rellos average	Under	Under	Over; good	Over; good	.....	J. Wyke, The Gardens, Bishop's Court, Straffan
KILDARE	Under	Average	Average; good	Over; good	Under	Under	Over; good	Under	Under	Frederick Bedford, Straffan House, Straffan Station
KILKENNY	Average; very good	Under; good	Under; bad	Average; good	.....	Under; bad	Over; good	Average; good	Average; good	H. Carlton, Kilkenny Castle Gardens
KING'S CO.	Under; good	Under; good	Under; good	Average; good	Average; good	.....	Over; very good	Average; very good	Average	T. J. Hart, Birr Castle Gardens, Parsonstown
LIMERICK.....	Over	Under	Under	Very good	Very bad	Very bad	Abundant	Very good	Under	W. A. Bowles, Adare Manor Gardens
ROSCOMMON	Over; good	Average	Under	Average; good	Average	.....	Average; good	Average; good	.....	T. Rogers, Frenchpark House Gardens, Frenchpark
WATERFORD	Average; good	Over; very good	Under; bad	Average; good	Average; good	.....	Over; very good	Over; very good	.....	Thos. Dunne, Strancally Castle Gardens
CHANNEL ISLANDS.										
GUERNSEY	Average; good	Under; good	Average; good	Average; good	Average; good	Under; good	Average; good	Average; good	.....	C. Smith & Son, Caledonia Nursery
JERSEY	Under	Under	Under	Bad	Good	Good	Good	Under	.....	John Nicolle, La Carrière, St. Martins
JERSEY	Average; good	Over; good	Under; good	Average; very good	Average; good	Under; good	Over; very good	Average; very good	.. ..	Edwin John Ashelford, The Nurseries, Queen's Road
ISLE OF MAN	Under	Under	Under	Under	.....	.....	Over; very good	Average; good	.....	James Murphy, Cronkbourne Gardens, Douglas
ISLE OF MAN	Under	Over; good	Under	Average	Average	Average	Over; good	Over; good	.....	James Inglis, The Nunnery House
ISLE OF MAN	Under	Under	Under; bad	Average; good	.....	Under	Average	Average; good	.....	Joseph Lloyd, The Gardens, Whitehouse, Kirkmichael

SCOTLAND.

Number of Record ...	Apples. (59)	Pears. (57)	Plums. (56)	Cherries. (57)	Peaches and Nectarines. (24)	Apricots. (30)	Small Fruits. (58)	Straw- berries. (58)	Nuts. (14)
Average	35	15	17	38	9	8	33	37	6
Over	11	—	4	9	4	6	23	13	1
Under	13	42	35	10	11	16	2	8	7
ENGLAND AND WALES.									
Number of Records...	(234)	(226)	(223)	(222)	(181)	(180)	(230)	(227)	(174)
Average	98	60	65	104	100	72	91	114	78
Over	25	8	7	32	25	25	132	91	18
Under	111	158	151	86	56	83	7	22	78
IRELAND AND CHANNEL ISLANDS.									
Number of Records...	(38)	(37)	(36)	(37)	(28)	(21)	(37)	(36)	(18)
Average	17	8	11	21	15	9	11	18	9
Over	6	4	1	3	1	—	26	14	—
Under	15	25	24	13	12	12	—	4	9

APPOINTMENTS FOR AUGUST.

MONDAY,	AUG. 1	Bank Holiday. Northamptonshire Horticultural Society's Show, at Northampton (2 days). Beddington, Carshalton, and Wellingdon Horticultural Society's Show, in Beddington Park.
TUESDAY,	AUG. 2	Scottish Horticultural Society Meeting.
WEDNESDAY,	AUG. 3	York Florists' Exhibition of Carnations.
FRIDAY,	AUG. 5	Midland Carnation Society's Show (2 days).
TUESDAY,	AUG. 9	Royal Horticultural Society's Committee.
WEDNESDAY,	AUG. 10	Bishop's Stortford Horticultural Society's Show, at The Grange. Wiltshire Horticultural Society's Show, at Salisbury. Hastings and St. Leonard's Horticultural Society's Show.
THURSDAY,	AUG. 11	Taunton Deane Horticultural Society's Show.
FRIDAY,	AUG. 12	Alderley Edge and Wilmslow Horticultural Society's Show, at Alderley Edge (2 days).
SATURDAY,	AUG. 13	Royal Botanic Society, General Meeting.
WEDNESDAY,	AUG. 17	Shropshire Horticultural Society's Show, at Shrewsbury (2 days). Dover Horticultural Show (2 days). Shanklin (Isle of Wight) Horticultural Show.
THURSDAY,	AUG. 18	Royal Jersey Horticultural Society's Show. Niton (Isle of Wight) Horticultural Show. Ponteferct Castle Horticultural Show.
FRIDAY,	AUG. 19	Devon and Exeter Horticultural Society's Show. National Co-operative Flower Show, at the Crystal Palace (2 days).
TUESDAY,	AUG. 23	Royal Horticultural Society's Committee. Brighton and Sussex Horticultural Society's Show (2 days).
WEDNESDAY,	AUG. 24	Harpenden Horticultural Society's Show.
THURSDAY,	AUG. 25	Ayrshire Horticultural and Agricultural Society's Show, at Ayr. Swansea Horticultural Show. Ellesmere Floral and Horticultural Society's Exhibition.
FRIDAY,	AUG. 26	Royal Horticultural Society of Ireland, Exhibition.
SATURDAY,	AUG. 27	Worsley Horticultural Society's Show.
MONDAY,	AUG. 29	National Chrysanthemum Society's General Meeting.

SALE FOR THE ENSUING WEEK.

FRIDAY,	AUG. 5	Imported and Established Orchids, at Protheroe & Morris' Rooms.
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AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—63° 2'.

ACTUAL TEMPERATURES:—

LONDON.—July 27 (6 P.M.): Max., 76°; Min., 60°.

PROVINCES.—July 27 (6 P.M.): Max., 70°; York; Min., 52°; Sunburgh Head.

Dull, close; thunder showers locally.

OUR correspondents in all parts of the kingdom have, with their usual kindness, provided us with the means of judging the amount and the quality of the fruit crop (see pp. 79 *et seq.*). Taking it for all in all, the fruit-year may be taken as below average.

Apples in Scotland are above average; in England they are much under the mark; in Ireland they are nearly up to the standard.

Pears in Scotland, as might be expected, are much below average, but still more so in England, where they are very bad. In Ireland they are not much better.

Plums are under average, and very much so in England and Ireland.

Cherries have done better; they are above average in Scotland, much above it in England, and up to the average in Ireland.

Peaches, Nectarines, and Apricots, are hardly of sufficient consequence to be noted here.

Small fruits, on the contrary, including Currants and Gooseberries, are up to average in Scotland, over average in England and Ireland.

Strawberries have been over average in Scotland, England, and Ireland. In most localities they have been abundant, in few have they been scanty.

Nuts, including Walnuts and Filberts, have been about average.

To make the records complete, the weather at the flowering period, the elevation, aspect, soil, and other local conditions, should be given, but time and space do not permit of these details being given. Anyone with a taste for statistics, and plenty of leisure, would do good service by collating the tables we have given since 1867, with the weather records, and, as far as possible, with the local conditions. Such a task is beyond the possibilities of a weekly journal.

Bamboos.

THE principal feature at the show at the Drill Hall on Tuesday last was undoubtedly the magnificent group of Bamboos and allied plants shown by Mr. FREEMAN-MITFORD, C.B. Messrs. VEITCH's group, like that of Mr. T. S. WARE, was smaller, but some of the specimens showed excellent cultivation, while Messrs. GAUNTLETT's group showed how well these plants do in Cornwall. We have already figured several specimens, and we hope to be able to figure several more, as no doubt Bamboos will be grown much more extensively in the future. Their perfect hardiness, and in many cases their extreme gracefulness, make it certain that when the public get to know them, they will adopt them largely. Most of them are hardy in all parts of the kingdom, and Mr. FREEMAN-MITFORD has given us a useful means of recognising the hardy ones by means of the smaller transverse veins. Those that have these veins are hardy; those destitute of them are uncertain or tender. Mr. MILNE REDHEAD tells us that in N.E. Yorkshire *Arundinaria japonica*, *Quilicoides*, *mitis*, and *Simoni* are quite hardy.

The afternoon lecture was given by Mr. FREEMAN-MITFORD, and was devoted to the consideration of the economic uses of the Bamboo, which scarcely falls short of those of the Cocoa-nut. "How can I exist for a single day without this gentleman?" say the Chinese, according to Mr. MITFORD. "How can I exist for a single day without this gentleman?" will be the cry of the gardener who is privileged to see the Bamboo garden at Kew, that at Batsford Park, at Shrubland, and many other places.

HYBRID PERPETUAL ROSE "MILTON."—Our Supplementary Illustration exhibits a variety of H.P. which was shown as a cut bloom by Messrs. W. PAUL & SON, of Waltham Cross, at the Royal Horticultural Society's meeting held on Tuesday, July 12, in the Drill Hall, Westminster. The flower is above the average size, of a purplish-red tint, and as seen on that occasion, it appeared to be rather rough. Mr. PAUL has faith in his production, and predicts a popularity for it.

HORTICULTURAL CLUB.—The annual excursion of the members and their friends took place under the most favourable circumstances on Tuesday, the 19th inst., and its success was mainly owing to the exertions and kindness of Mr. HARRY J. VEITCH. A large party assembled at the Great Western Station at Paddington at 10 o'clock. They were thence conveyed in a saloon carriage to Slough, where breaks awaited them. Thence they were first driven to Stoke Pogis, in the churchyard of which village the poet

GRAY lies buried, and where he wrote his *Elegy*. The church is prettily situated in Stoke Park, and the members, through the kindness of Mrs. BRYANT, had an opportunity of viewing the mansion and its contents. They afterwards drove to East Burnham Park, the residence of Mr. HARRY J. VEITCH, who had kindly invited the party to luncheon. Sir J. T. D. LLEWELYN, Bart., M.P., the Chairman of the Club, thanked Mr. VEITCH for his hospitality, and expressed his regret at the unavoidable absence of their secretary. The party then drove to Dropmore, where a sight of the grand Conifers was much enjoyed. The return was made through Burnham Beeches, where some time was spent in viewing some of the finest trees; and then, after a stroll through the grounds occupied by these fine old trees, comprising about 400 acres, the party returned to Mr. VEITCH's, where tea was kindly provided for them all, and they left for town at 6.45. It should be added that, not only did Mr. VEITCH receive them "right royally," as one of their members expressed it, but he took upon himself the whole arrangements, and so well, that not a single hitch occurred, and one of the most pleasant and enjoyable outings the Club has ever had will be long remembered by those who had the pleasure of sharing in it.

POSTPONEMENT.—We are desired to state that the West of England Chrysanthemum Society's Show will be held at Plymouth on November 3 and 4, instead of November 1 and 2, as previously announced.

NATIONAL CHRYSANTHEMUM SOCIETY'S OUTING.—The members and friends of this society have for years past adopted the practice of having an annual outing in the month of July, and the one for the present year took place on the 25th inst., a large party going by a morning train to Harwich from Liverpool Street, where they were met by a contingent of members and friends from Ipswich, Colchester, &c., and about 170 persons partook of an excellent dinner at the Great Eastern Hotel, Mr. T. W. SANDERS, the chairman of the committee, presiding, supported by some of the officers and members of the committee. A few complimentary toasts having been drunk, the company went aboard one of the fine saloon steamships of the Great Eastern Railway Company, and having rounded the Bell Buoy, went up the river Orwell to Ipswich, where a landing was made for an hour, some of the company proceeding to view the town; and a considerable number were conducted over the extensive works of Mr. WILLIAM COLCHESTER, by whom they were hospitably entertained. Soon after five the steamer returned to Harwich, the fine wooded landscapes on either side being seen at their best and greatly admired. After partaking of tea at the hotel, the town of Harwich was visited, and the return journey made soon after eight o'clock. The weather was delightful, and all expressed themselves highly pleased with the day's outing.

RESEARCH STATION FOR HAMBURG.—It is, we learn, the intention of the State of Hamburg to establish a station for the investigation of insects and contagious funguses inimical to plant life. The director of the establishment is Dr. C. BRICK, of the Botanical Museum, Hamburg; and the zoologist, Dr. L. REH. The chief reason for the establishment of the station was the continual examination at the port of Hamburg of imported fruit from the United States of America suspected of infestation by the San José scale. The station will further watch the importations of living plants from abroad, in reference to *Phylloxera*, &c.; and other important objects of its mission will be the combating of all sorts of plant diseases, the inspection of the schools for viticulture, of Vines grown on trellises, &c., and fruit orchards in Hamburg and the surrounding country, and generally to occupy itself with matters pertaining to the above subjects.

YORKSHIRE NATURALISTS' UNION.—The 140th meeting will be a three days' excursion, held at Easington, for Spurn and Kilnsea, from Saturday to Bank Holiday Monday, July 30 to August 1, 1898. Week-end headquarters at Easington. Accommodation



FIG. 21.—HYBRID PERPETUAL ROSE "MILTON": DEEP CRIMSON. (SEE P. 86.)

being very limited, early application for rooms should be made to Mr. Sheppard, who will keep a list of rooms available at Easington and Kilnsea, and allot them to members according to priority of application. If all are taken up, late applicants can find accommodation at Withernsea. Programme of Monday's meetings: 3.30 P.M., conveyances leave Kilnsea Warren for Easington; 4.0 P.M., meat tea, 2s. each, at the Neptune Inn, Easington; 4.45 P.M., sectional meetings, and 5.0 P.M. general meeting, in the open air if weather is fine; the chair at the general meeting will be occupied by the president of the Conchological Section (Mr. F. W. FIERKE); 5.20 P.M., conveyances leave Easington for Withernsea; 6.35 P.M., train leaves Withernsea for Hull; 8.40 P.M., train leaves Hull for the West.

SPITALFIELDS MARKET.—After a considerable waste of time in "looking round" the subject, the London County Council has determined to apply to Parliament for the necessary powers to enable them to acquire the existing $2\frac{3}{4}$ acres of market-space and buildings in Spitalfields—compulsorily, if necessary. The place is too often in a congested condition, almost beyond the disentangling powers of London policemen.

THE HOLIDAYS.—Those lucky ones who are contemplating how and where to pass their holiday, may peruse with great interest and advantage the taking little pamphlet issued by the G.E.R. Co., entitled, *Royal Mail Route to Holland*. As the artistic coloured plates show, Holland is by no means the only place within easy reach of the Harwich route, but Belgium, Switzerland, Holland, Denmark, and Scandinavia can be visited; and the fares are very low, considering the accommodation given.

STATE HORTICULTURAL EDUCATION.—Sir Trevor Lawrence when presenting, on the 20th inst., the prizes, &c., gained by the students during the past year at the Horticultural College, Swanley, lamented that we were still without any assistance from the State in the direction of systematic horticultural education. Individual effort alone has to do, said Sir Trevor, what in Belgium, Holland, France, and Germany is undertaken by the State. We wonder if we shall ever have this question of technical education satisfactorily settled?

THE CACTUS SOCIETY.—If anything can justify the multiplication of "special" horticultural Societies, perhaps it may be, that they become influential and successful. If the National Cactus Society is to justify its existence on such grounds, it must wake up. At its exhibition on Tuesday last, there were not more than twenty plants staged, and there were but four exhibitors.

BRIGHTON AND SUSSEX HORTICULTURAL SOCIETY.—The members of the Brighton and Sussex Horticultural Society listened to an address which was delivered to them on Thursday night, July 21, by Mr. H. ELLIOTT, of Lancing, on "The Nature and Development of Buds." Mr. ELLIOTT is a ready and fluent speaker, with many graphic and striking phrases at command. His lecture went into the life-history of a bud, explaining its formation, and the chemical actions that took place in that formation, and showing the part played by the bud in relation to the growth and well-being of the tree. He demonstrated the similarity of the bud, the seed, and the bulb, and pointed out the value of having such scientific knowledge of the economics of Nature that the gardener would more intelligently appreciate the principles on which he carried out his various details of culture, and be more certain of attaining the highest development. He particularly applied his observations to the processes of grafting and pruning. He impressed upon his hearers, that whatever was found in the embryo would come out in the fruit.

BURFORD, DORKING.

It is doubtless due to the fact that Sir Trevor Lawrence consistently follows his own proved methods of culture that we are able to say to-day that his

gardens generally, and especially the extensive and almost priceless collection of Orchids, which embraces more rare species than any collection ever got together, are in finer condition than ever. Many times during his long experience in Orchid culture has Sir Trevor Lawrence heard of a royal road to successful Orchid culture having been discovered by someone who has derived favourable results from this or that new potting material, or of some stimulating chemical; but the voice of the charmer has never been listened to, and consequently his collection of Orchids is one of the best in the world, whilst the royal roads to success have turned out either blind lanes or short cuts to the rubbish-heap. In his efforts to secure the finest degree of health in his plants, he has always been well seconded by Mr. W. H. White, his careful and energetic cultivator.

That which strikes the visitor especially is the perfect order and cleanliness prevailing in all departments in and out-of-doors; and this is more apparent in the floors, staging, pots, and everything else in the houses. This leads to another notable feature, viz., the pureness of the air of the houses, whether warm-house or cool ones. Again, throughout the whole place it is not possible to find a water-logged or over-watered plant, or one unduly dried, the needs of every plant being well and suitably attended to, the result being that the Orchids have a profusion of roots. Another striking thing in the Burford collection is the beauty of the foliage of the plants, and the absence of injury or disease. But in gaining all this experience, some failures, of course, have occurred; and even of them Sir Trevor Lawrence speaks pleasantly, and sums up with the remark, "If I only had the plants we have lost, in addition to those we now have, how delighted I should be, but many of them money cannot replace." At one time the *Odontoglossums*, though keeping healthy, did not increase much in size, and it was reported that at Burford, as at Downside, near by, *Odontoglossums* could not be grown. But they were taken in hand, and especially during the last three years have made such progress that they are now second to none, and in appreciation of their good behaviour a very fine new house has been built, which is now filled chiefly with fresh imported *Odontoglossum crispum*.

Passing through the Orchid-houses and noting some of the more beautiful species and varieties in flower, we found among the remarkable collection of *Cirrhopetalums* and *Bulbophyllums* a very singular little Brazilian species, and the curious inflated-flowered *B. elegans* in bloom, and in bud the rare and showy *B. longisepalum*, *B. grandiflorum*, and others. In this warm house the fine collection of *Phalænopsis*, and the equally fine lot of *Catasetums*, both of which genera have in times past given trouble, are in grand condition, and in proof that the house is suitable for *Phalænopsis*, is the evidence of seedling *Phalænopsis* coming up in a noble specimen of *Vanda Sanderiana*, which brought the seeds on its roots. Here, too, in flower are *Cypripedium* × *Lebaudyannum*, *C. × Eleanor*, *C. Stonei*, and other species; and in splendid health the rare *C. Stonei platyanum*. In this house the lesser *Angræcums* thrive, and many are sending up spikes, among them being one of the original importation of *A. Kotschyi*, a species which has almost disappeared from cultivation. At one end of the house a plant of *Vanda Lowi* was sending up a good spike; and in bloom were *Dendrobium Dearei*, *D. crystallinum maximum*, and other warm-house species.

Of the rarer species in bloom or bud in the *Aërides*-house were the pretty carmine-crimson *Saccolabium Hendersonianum*, a good example of *S. guttatum*, and the white and blue *S. coeleste*; tall spikes of *Phaius Humbloti* appearing in the centre stage, and on one side a tub of the Madagascar Lattice-plant, *Aponogeton (Ouvirandra) fenestralis*, with its singular large skeleton leaves.

In the lobby we remarked *Vanilla planifolia* covered with pods, and an interesting collection of *Polystachyas*, those in flower being the rose-lipped *P. Lawrenceana*, a very pretty species from the Nyassa district, and *P. odorata*. This season seems

to be favourable to growth in *Dendrobiums*, and the Burford plants are making vigorous growth. This is especially the case with the hybrids raised at Burford, and which promise to be even much finer than usual.

In the intermediate-houses are handsome varieties of *Sobralia*, viz., *S. virginalis*, a fine white, with yellow base to the lip; *S. violacea alba*, white, with yellow tinge on the lip, and a very pretty broad light purple band; and a fine dark form of *S. macrantha*, were noted. In the house with these plants were the following in bloom:—*Epidendrum arachnoglossum*, *E. × O'Brienianum*, *E. fragrans*, *E. Wallisii*, *E. variegatum*, and other species; *Epiphrontis* × *Veitchi*, the curious *Lycaste Dyeriana*, with a growth somewhat like that of *Cattleya citrina*, and singular-looking greenish flowers; the gold and purple *Eriopsis rutidobulbon*, the scarlet *Habenaria rhodocheila*; *Stanhopea Devoniana*, the remarkable *S. Rodigasiana*, *S. tigrina*, *Oncidium O'Brienianum*, *Platyclinis glumacea*, a plant with about 100 spikes; *Miltonia vexillaria superba*, the original plant named in 1882; the pretty scarlet *Hexisia bidentata*, *Lælia majalis*, &c.

In the cool-houses, the plants were remarked in grand condition, and some of the *Odontoglossums* in flower or bud. Among them was a pretty plant of the floriferous *O. aspidorhinum*; also a very handsome species with flowers resembling *O. ramosissimum*, but with different bulbs; *Oncidium dasytyle* and its showier hybrid, *O. præstans*; and a number of the pretty *O. spilopterum* in spike. Among Burford hybrids, the showiest are *Cypripedium* × *Lawrebel*, *C. × concolawre*, and the handsome *C. × Olenus* Burford variety, the finest of its section. A plant, a singular cross between *Cattleya elongata* (Alexandra) and *C. Schilleriana*, the expanding of whose flowers is looked forward to with great interest, was in bud.

The Masdevallia-house had the usual collection of interesting and rare species of dwarf-growing *Masdevallias*, *Restrepias*, *Pleurothallis*, &c., some of them in bloom; and on the staging among the fresh green foliage appear flowers of some of the showier species. The *Cattleyas* and *Lælias* have but few flowers at this season, but the plants, and especially the large masses of *C. Bowringiana*, were in fine health; so also the large specimen of *C. Lawrenceana* of the original importation.

In the little seedling-house many interesting crosses were approaching maturity; in the warm lean-to, the *Vanda* × *Miss Joaquim*, which has been so greatly admired when shown from Burford, and which is being propagated by division, and also the plants of its two parents, *V. teres* and *V. Hookeriana*, were thriving admirably, and the specimen of *Eulophiella Peetersiana*, recently illustrated in the *Gardeners' Chronicle*, safe over the great effort of flowering, and again growing well in company with another plant of it in the large stove, which is bright with the spathes of large plants of the showiest *Anthuriums*.

The gardens and pleasure-grounds, sheltered by the almost perpendicular face of Box Hill, whose chalky surface is partially clad with Box, Beech, *Viburnum*, and other trees, are beautiful in the extreme. At the entrance the tall straight trunks of the trees, with their carpeting at the base of Ivy, and yellow-flowered *St. John's Wort*, is a cool and beautiful spot. Beyond stretches the smooth turf, with its glowing beds of flowers, most of them the newest or best of their kinds. Here were observed a pretty clump of *Cannas* in bloom, there a showy bed of *Begonia Martiana*, edged with the dwarf red *B. Bavaria*; then an elegant arrangement of green and variegated *Eulalias*, and at every turn fresh and pretty combinations, none of them commonplace. In the centre of the parterre is a fountain and basin, in which *Nymphæa Robinsoniana*, *N. Marlacea* and its varieties of various shades of rose-colour, and the pale yellow-coloured *N. chromatella*, the delicate blush-white *N. alba rosea*, were flowering. The lobes or bays at the edge of the basin were aglow with the flowers of *Begonias*, and the whole was beautiful in effect.

In the quarters where novelties of home and foreign origin are tested, were noted a number of *Iris lævigata*

(Kämpferi). These plants did not succeed at Burford till a certain kind of bog-earth which Sir Trevor Lawrence thought might suit them, was brought in, and since that was done, they have grown well. Another plant noted was the hybrid *Azalea* × *Rhododendron*; and in the bed in which it grew was *Myosotidium nobile*, also growing well. Other showy beds were *Platycodon Mariesii* and *P. M. alba*, *Phloxes*, *Pentstemons*, and *Carnations*. The handsome *Rubus leucodermis* with its whitened stems, was remarked at the edge of the dell, some patches of *Gentians*, a grand array of the hardy *Crinum Mooreanum* and *C. × Powellii*, and varieties of *Penzance Sweet Briars*, clothing the fence dividing the herbaceous ground from the other part.

The fruit-houses contain capital crops, and the greenhouses were bright with tuberous *Begonias*, the dark blue flowers of *Exacum macranthum*; *Streptocarpus*, &c., mingled with the various graceful species of *Asparagus*, and the warmer houses with species of *Anthurium*, &c. Two fine examples of *Solanum Wendlandianum* were noticed, which had been out of doors all the winter, and one is well set with flowers; also a great bush of *Swainsonia galegifolia alba*. The sheltered spaces between the glass-houses are used for acclimatising rare plants, and for bringing on new water-Lilies in tubs of water, preparatory to placing them in the ornamental basin. Mr. Wm. Bain, the gardener at Burford, keeps the whole of the gardens worthy of the noted Orchid collection; and the

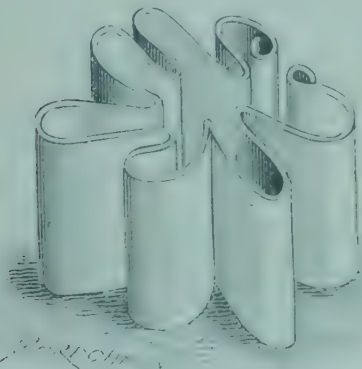


FIG. 22.—JAPANESE ARRANGEMENT OF FLOWERS.

chief reason why gardening generally is so satisfactory at Burford is, that Lady Lawrence and the rest of the family are all true lovers of plants and flowers.

JAPANESE ARRANGEMENT OF FLOWERS.

THE Japanese are justly famous for their skilful arrangement of flowers, by which the poorest of blooms are made to look their best, by being so displayed that their full beauty can be appreciated. Most of these good effects are produced by placing the flowers very sparsely in Bamboo-tubes, no attempt at a crowded bouquet being ever made. Some of the Bamboos are familiar to us by this time, but, strange to say, they have been more widely adopted by milliners for the display of their artificial blooms than by those who are clever at the disposal of the natural blossoms. Perhaps one reason for this is, that after a time, the tubes are apt to leak, and their owners have not enterprise enough to get a small glass or zinc-lining made to slip inside them to hold the water.

The latest importation from Japan for the purposes of floral decoration consists merely of a long strip of lead, which is crinkled and crumpled up into as many folds and flutings as possible (see fig. 22). These crumples must be so managed as not to interfere at all with the firm base, which enables the lead to stand steadily at the bottom of a bowl or basin. The flutings form a series of miniature tubes, into which the stems of the flowers are pushed, and which can be easily pinched or enlarged, as the slimmness or thickness of the stems require. The flowers should on no account be crowded; and, of course, the higher

they stand up above the edge of the bowl, the more graceful will they look. Not infrequently the lead is placed in the centre of a large bowl, the water in which is allowed to be seen all round the flowers, and is supposed to give a cool look to the decoration. A miniature pond may readily be produced in this way, with small Sedges, grasses, *Butomus*, or *Herb Trinity*. The leaden ribbons vary somewhat in size; some are silvered, others are left in the natural colour of the metal. Those who are skilled in the art of arranging flowers should feel an interest in trying experiments, and gaining fresh effects, by the help of this very simple contrivance, which we first saw in use in one of Messrs. Wallace's exhibitions at the Drill Hall.

BELGIUM.

ANTWERP HORTICULTURAL EXHIBITION.

AT the last Exhibition of the Antwerp Royal Horticultural Society, under the presidency of Baron Ed. Ory de Lewaart, Governor of the Province, the cut Roses shown were specially fine, notably the fifty varieties from M. Henri Vanderlinden, which were cut with long stems and foliage, and grouped with pot-Ferns.

In certain sections the entries were but few, but the classes for groups of plants proved very popular. Among the best groups were those arranged by Madame Ernest Osterrieth and by M. Guillaume de Bosschere. The former collection occupied over 100 square feet, and included various blooming and not blooming plants, among them twenty fine *Streptocarpus Wendlandi*.

In M. de Bosschere's group, thirty Orchids were placed by a mirror with charming effect. Other floral decorations, especially a beautiful white basket of *Odontoglossum crispum* and *O. citrosum*, and other white blossoms, were tastefully arranged. The two exhibitors obtained Diplomas for Artistic Merit. The same distinction was awarded to M. Hessels for his fine groups of flowers, and to M. Blocky for the decoration of the winter-garden of the Royal Zoological Society.

Among the features of this exhibition were the fine *Iris anglica* and *I. Kämpferi*; the Orchids from M. Jules Hye, M. Ch. Vuylsteke, and M. Janssens, were also greatly admired, especially *Cypripedium callosum Sanderæ*, from M. Hye, which obtained a Certificate of Merit with the congratulations of the jury. I would also mention the fine decorative plants from MM. de Smet Frères, *Ch. de B.*

FLORISTS' FLOWERS.

CALCEOLARIAS.

ABOUT this date a sowing of seed for the main batch may be made. The seed-pans should be clean, and well drained, with a thin layer of moss, or any other suitable material, over the crotch, to afford egress to the water. In filling the pans, use a mixture of loam, peat, and leaf-mould, in about equal proportions, and fill the pots to within half an inch of the rim, press firmly, and make smooth; then stand the pans aside, and afford them a good dose of water with a fine-rose can, and in about two hours sow the seed thinly and evenly, but do not cover it with soil—merely sprinkle a pinch of silver-sand over it. Stand in a cool, shady spot, and cover with sheets of glass, a cold frame or hand-glass being placed over all.

If on examination the soil appears to be dry, apply water with the finest rose-can. When the plants appear, tilt the sheets of glass, and in a few days remove them entirely. At this stage, if water be needed by the soil, the pans must be dipped in a bucket of water, overhead-watering causing damping-off. When the plants have got two pairs of leaves, transplant them very tenderly to prepared seed-pans, about 1 inch from plant to plant, sprinkle some dry sand on the surface, and afford a gentle application of water through a very fine rose, and put the

pans into the same frame. The next shift will be into small pots, using then a slightly heavier soil. See that greenfly does not molest the plants, and with that intent afford slight fumigations. The chief points in the cultivation of the plant at this season, are the maintenance of a cool medium, freedom from direct sunshine, dampness with air afforded in sufficient quantity to induce a sturdy growth, and cleanliness. The best place for them is a frame facing north, with a coal-ash floor, which should often be sprinkled with water. Slugs must be diligently looked for. The best-sized pot for wintering the plants in, is a deepish 48. *H. Markham, Northdown, Margate.*

A STRAWBERRY-RASPBERRY.

ALL students of botany have been, perhaps are made to distinguish between the Strawberry with its dry pips or achenes bedded in a fleshy receptacle, and the Raspberry, with its small drupes (stone-fruits) on a dry receptacle. Both, it is hardly necessary to say, are members of the Rose family. But to show how variable plants are, and how cautious those who write or speak about plants should be, we figure a Strawberry, discovered by Mr. Worthington Smith, which, instead of the dry achenes (erroneously considered seeds) of the Strawberry, has the fleshy drupes



FIG. 23.—A STRAWBERRY-RASPBERRY.

of the Raspberry or Blackberry. We have never seen this before, and it is one of the most curious examples we have met with.

ROSE ENCHANTRESS.

(FIG. 24, p. 89.)

THIS introduction of Messrs. W. Paul & Son, Waltham Cross, is a new Tea-scented variety catalogued by them in the present year. It has flowers of creamy-white slightly tinted with buff in the centre, large, full, and globular; the plant is of vigorous growth with fine foliage. The catalogue tells us that "it is splendid for pot-culture, and late autumn and winter flowering;" and that plants have borne "three full crops of blooms in the space of twelve months." The plant has been exhibited at the Drill Hall during the present year. Having said thus much in its favour, we must ask our readers to test the good qualities of the variety in their own gardens, for the Rose has idiosyncrasies not a few. A good illustration of a bloom of this Rose was given in *Gardeners' Chronicle*, Dec. 7, 1895, p. 673.

HOME CORRESPONDENCE.

CROCUS NUDIFLORUS IN ENGLAND.—I should be much obliged if some of the readers of the *Gardeners' Chronicle* would throw some light upon the occurrence and cultivation of the autumn Crocus (*C. nudiflorus*) in this country. I wish to ascertain if it has ever been in any degree a popular garden plant, and if so, when, and whether there is any reference to its cultivation before the year 1738. I am afraid there is an initial difficulty, owing to the confusion of it with either *Colchicum autumnale* or *Crocus sativus* (by botanists, at any rate) until about the beginning of this century. The object of this enquiry has

reference to the occurrence of this Crocus as a native or naturalised plant in England. It is well established in many stations in eight contiguous Midland counties, but is not reported to grow wild in any other part of the country. This, bearing in mind the peculiar endemic character of the genus, points rather to its being native here; but I must admit that an acquaintance with about ten places where it grows within a few miles of Halifax, does not lead me to strongly support that view. On the other hand, I cannot believe that it is merely a garden escape. Though the nature of the stations where it is found does not preclude its being a native, it points rather to its being a plant which was once cultivated as a substitute for the Saffron Crocus. Against this view there is the fact that none of the farmers (on whose land it is growing) or villagers make any

Halifax; near Derby (J. Whittaker); Rochdale (Mrs. Atkins); Warrington, and meadows near Nottingham—but its being really indigenous is very doubtful, as it occurs nowhere in northern France, and the continental area of the species is distant from the English habitats by fully 6° of latitude." . . . "Crocus nudiflorus is one of the earliest of the autumnal species. The new growths commence in July, immediately after the maturity of the corm and the dying away of the preceding vernal leaves, each producing a solitary flower whilst the leaves are yet dormant. The flowers are developed with remarkable rapidity early in September, and are fugacious, remaining in perfection only three or four days. Cultural directions are scarcely required for a plant having the vigour of *Crocus nudiflorus*. It is one of the largest and most ornamental species of the genus, and one which no

There is no doubt that a clear official statement would greatly assist the Institution, and increase the number of gardeners who would subscribe thereto. *Thos. Fletcher.*

CAMPANULA MEDIUM CALYCANTHEMA.—We observe with much pleasure an illustration of *Campanula Medium calycanthema*, on p. 65 of your issue of the 23rd inst. It may be of interest to your readers to be reminded of the fact that this beautiful form was fixed by our predecessors, Messrs. Waite, Burnell, Huggins & Co., and offered to the trade about the year 1872. We have it on record that some specimen plants were submitted to Dr. Masters, F.R.S., with a view of obtaining his opinion as to the value of the plant, and he not only highly commended it, but was kind enough to furnish us with the name which the plant now bears. The enclosed photo of the plant submitted to Dr. Masters will, no doubt, be of interest to you. We may also mention that this variety is now commonly known as the "Cup-and-Saucer" Canterbury Bell. *Cooper, Taber & Co., Ltd.*

THE ROUNCIVAL PEA.—For the information of readers of the note on p. 70, the name of this Pea is stated to have its origin from Roncevalles, a town in the north of Spain, in the Pyrenees, from whence they were first imported. On referring to one of the oldest Seed Catalogues in my possession, that of Stephen Switzer, published in 1731, compiled largely according to modern ideas, and entitled *A Catalogue of Seeds, Fruits, Shrubs and Flowers sold at the Flowerpot over against the Court of Common Pleas in Westminster Hall, and at his garden on Millbank, Westminster*, I find this enlightened seedsman affords the following particulars. After recommending certain varieties of Peas for sowing in October and November, and from Christmas to Candlemas, he says: "For a third sowing are the Marrowfats, Spanish Mullato, Dutch Admirals, and the blue Rouncival, or Union Pea or Nonsuch, which is a very large, fine kind of the Spanish Mullato, about the beginning or middle of March. It is best to stick them in the summer. A gentleman near Hammer-smith cuts the Marrowfats off, and some serve the Union so, after he has eat the first crop, and lets them spring again, they will, as he says, bear a second crop." This would seem to confirm the fact that this Pea was brought to our fields and gardens from the northern part of Spain. Stephen Switzer was a remarkable man for his time; between 1715 and 1745 he was the author of several of the most advanced works on gardening, and acknowledges his having industriously submitted "to the meanest labours of the scythe, spade, and wheelbarrow." He first of all appears to have been apprenticed in the service of the celebrated gardener, George London, superintendent of their Majesties' gardens, and director-general of most of the gardens and plantations of Great Britain, and page of the back-stairs to Queen Mary, afterwards a partner in the firm of London & Wise, at the great nursery at Brompton. Johnson, on p. 159 of his *History of Gardening*, observes of Switzer, "Neglect has pursued him beyond the grave, for his works are seldom mentioned or quoted." To me he appears the best author of his time, and if I was called upon to point out the classic author on gardening, Switzer would be one of the first on whom I should lay my finger. Pulteney, in his ingenious *History of the Progress of Botany* in this country, seems to have ignored him altogether. The introducers of most of the other varieties of Peas mentioned by your correspondent "R. D.," will be found in a series of articles on this vegetable, contributed by me to the *Gardeners' Chronicle* in the autumn and winter of 1894. *Donald McDonald.*

OROBANCHE SPECIOSA.—Your allusion to this plant reminds me of a field of Beans just outside Cairo, which, at a distance, looked like some nursery ground for gorgeously flowering herbaceous plants in masses, as there was more of the Broomrape to be seen than Beans. It consisted of tall spikes some 4 feet in height, densely covered with white, yellow, and lavender-coloured blossoms of different shades. It would make a splendid herbaceous border plant, of course associated with some Broad Bean plants for it to live upon. By dumb show I pointed out to an Arab the necessity of cutting them down, pointing to some dead Bean plants. He only shrugged his shoulders, smiled, and said, "Kismet," and then walked away. *George Henslow.*

A CURE FOR BLINDNESS IN THE STRAWBERRY.—Your readers this week will no doubt have re-



FIG. 24.—ROSE ENCHANTRESS, GROWING AS A STANDARD. (SEE P. 88.)

use of it, or have heard of any application of it for culinary or medicinal purposes. Still, there is no doubt that Saffron was once largely used, although it has fallen into comparative disuse. It would be interesting to know also, for the purpose of comparison, how far back the cultivation of *C. vernus* and *C. sativus* in England can be traced. *W. B. Crump*, 90, King Cross Street, Halifax. [The following extract from Mr. George Maw's excellent monograph will probably supply some of the required information:—"There are also several localities in the midland counties of England where *C. nudiflorus* may be mistaken for an indigenous plant—hilly pasture-field below Woolstanton Church, one mile from Newcastle, Staffordshire (Mrs. Edwards); Adlington, near Wigan (Mrs. J. Hoare); Norfolk (Mr. J. Hoare); near Shrewsbury, in the Quarry Walks, about the Dingle, in the grass field, and in the adjoining field to the west (T. H. Archer Hind); meadows near Manchester, very common; fields at Sairle Green, near

garden should be without. In a warm, open autumn, its clear purple flowers form a most attractive addition to the rockwork or herbaceous border; but as the flowers are liable to be broken down and injured by rain, their full beauty can best be preserved under the protection of a large bell-glass or cold frame. In such a situation they form a mass of rich purple, the brilliancy of which is enhanced by the contrast of the colour of the bright golden stamens and stigmata." *Ed.*]

THE GARDENING CHARITIES.—If Mr. Monro will refer to your issue of July 9, he will find that I offer £20 to the Royal Gardeners' Benevolent Institution on the condition that "every subscriber who is a gardener, shall be absolutely certain that at least the amount of his payments, plus 2½ per cent. compound-interest, shall be guaranteed, if applied for, either at the age of sixty-five or at death." The offer was not an unconditional one, as he appears to imagine.

marked the editorial note following the letter of Mr. H. Fisher, of Flixton Hall Gardens, Bungay, on p. 73, relating to the fruiting of the Strawberry called Monarch. Your remarks are very pertinent to this subject, and I wish with your permission to back up the subject by showing that I got over Vines from Turkey, and after I had had them some time I found that they did not show for fruit. One of my friends from Constantinople who grows Vines there, informed me that it would be necessary for me to obtain Vines in England of different varieties to put near to the Vines from Turkey, and that then they would fruit. His experience in Turkey was that the Vines required the aid of other varieties of Vines to cause them to yield large crops of Grapes. *Thos. Christy.*

— When it is suggested that what is termed "blindness" in Strawberry plants may possibly be corrected by planting some fertile variety close by to presumably furnish pollen, does not this advice arise from a misconception of what is in gardening parlance meant by "blindness"? But the misunderstanding is entirely due to the use of a term that is misleading. By blindness, in a floral sense, is meant absence of fertility, or imperfect fertilisation. The term in the ordinary sense, as used in relation to Strawberries, means entire absence of flowers, the plants showing none whatever. To what cause that form of blindness is due no one seems able to tell, as varieties habitually fertile occasionally fail to produce bloom. I have never yet heard of a case where Strawberry-flowers went blind because pollen was absent. *A. D.*

COBBETT'S CORN.—Although this selection of Maize is not much heard of now, yet some twenty years ago it was well known, and formed, so far as I am aware, the only product of a garden character to which the name of "Cobbett" was attached. The variety was dwarf and precocious. The stock having been carefully selected for English culture, and with ordinary care from open-air sowings, good ripened cobs were easily obtained in Middlesex. The late William Abbott, eldest son of the famous Cobbett, referred to by Mr. Roberts, and who was for some time my near neighbour at Bedford, Middlesex, informed me that the introduction was erroneously attributed to his father, as he was the real introducer of the variety here from America. Mr. Abbott had the corn grown largely by a local farmer for sale, and tried hard to push it into notice for agricultural purposes, but failed. I found it readily productive sown on mounds beneath which a few spits of manure were buried towards the end of April, ripening cobs in August and September, also furnishing plenty of green cobs for cooking. *A. D.*

CARBOLIC-SOAP AND GREEN-FLY.—What can I do to clean my Rose-bushes? Such is the question often asked, especially by amateurs and cottagers, with pathetic earnestness, when they find their Rosas infested with green-fly. The answer invariably given is: Syringe the bushes with some approved insecticide, which will effectually clear them of the pest. They find, however, very little comfort or encouragement from such a statement, because they say "There are so many cures recommended, and we don't know what strength to use them, and might kill the bushes as well as the fly; and moreover we have no syringe with which to apply them. We must therefore leave them alone, hoping that a heavy shower will soon come and wash a lot of them away." I do not know if carbolic-soap as an insecticide is a new discovery, but it so happened that a member of the household was using the soap, and seeing a quantity of fly on a Rose-shoot she bent it gently and dipped it in the liquid. In a short time after, the shoot was examined, and found to be clean and uninjured. I thereafter went over three beds of Teas, some of the shoots of which were badly infested, dipped the points in the liquid, and found them next morning perfectly clean, without a leaf being injured. I therefore recommend all those troubled with insects on their bushes to secure a small piece of this soap, wash face and hands in two quarts of soft water well with it, put the solution in a shallow dish, bend the shoots gently and immerse the points, bud and all, and the insects will disappear. The Rose-bed may therefore be cleared at a cost of less than one farthing. *W. W., Fifeshire.*

CARROTS.—Whilst Mr. Markham is lauding certain varieties of Carrots with which we have long been familiar, it is far from pleasant to find in so many directions how badly Carrots have done this season. No matter on what soil seen, and I have seen the produce of hundreds of sowings of late, and

nothing so rare as a good clean bed of Carrots. Parsnips, Onions, and Beets close by have been first-rate. The maggot has been credited with the trouble, but aphids seems to have been the primary cause, for these insects have attacked the foliage in an unusual way this year. No doubt, could liberal soakings of manure-water have been given, much good might have been done. The cold nights so much in evidence in the spring seem to have weakened the foliage, and robbed the plants of power to recover from the attack. *D.*

STRAWBERRY RICHARD GILBERT CARMICHAEL.—This promises to be one of the finest and most useful of all Mr. Carmichael's seedlings. A cross between Frogmore Late Pine and Waterloo, it was until this year considered a mid-season Strawberry; but this year it ripened abreast of Royal Sovereign on the same ground. On Saturday, July 16, I have just returned from a careful inspection of these and other Strawberries in Mr. Carmichael's garden, Inverleith Row, Edinburgh. As he intends showing some of the best of these at the show of the Royal Horticultural Society on July 26, it is not needful to advert to them further here than to add that they retain the qualities for fertility, quality, and stubby growth already given them. The two Cockscomb-fruits of Richard Gilbert, gathered at random this morning, each turn the scale at 1 oz. (one is 2½ inches across, the other 2¼ inches). The colour is dark, revealing a good dash of Waterloo blood, the flesh solid, the specific gravity the most dense and heavy of any Strawberry I have yet handled. The flavour is also excellent, and it has all the qualities of a good traveller. The Princess of Wales and Queen of Denmark are smothered with fruit, few or any of which will be ripe this month. From what I have recently seen of new Strawberries, it seems to take some of them two or three years to fall into their true fruiting season. Double-bearing sorts, as Louis Gauthier, and the new perpetual hybrids, such as St. Joseph, are likely to add several months to our pleasures of Strawberry-growing and eating. *D. T. Fish, July 18.*

MARKET GARDENING.

HARDY FRUITS.

(Continued from p. 25.)

THE APPLE.—In writing about this most important fruit, I propose to adopt the classification initiated by Mr. C. Whitehead, in *Fruit Growing in Kent*, adding to each section new and tried kinds, as well as novelties up to date. But I am writing for all England, not for a single county. Many sorts, highly and justly appreciated in their own district, are not fitted by Nature to thrive elsewhere. I shall not include many such local kinds.

Having had a long experience with the pomona of all the so-called Apple-growing counties, especially with the garden of England—Kent, the cider-producing counties, and also Normandy, I have quite given up all attempts to convince growers that there are better kinds than they insist on growing, and better methods of compassing the economical production of paying fruits; to quote Butler's jingle—

"Convince a man against his will,
He's of the same opinion still."

So, endeavouring to honestly say my say, "I leave it to be accepted by those who will, and ignored by those who will not." I have already said that the Apple is indigenous, and no doubt when our remote ancestors dyed themselves with woad, and made their "dress-coats" of the skins of animals taken in the chase, with the tails of the captured beasts hanging down behind (the archetype of the modern dress-coat), the boys of the period climbed the Crab-trees of our forests and woods and got the fruit, and, doubtless, the stomach-ache too. Oh, shade of Darwin! must not one acknowledge as great a difference between a monkey and a West-End exquisite as between a Crab and a Cox's Orange Pippin? No one doubts the origin of our Apples to be the Crab, the rough, sour fruit being found wild from Land's End to John o'Groat's. The methods of propagating the varieties of Apple have been given in former numbers of the *Gardeners' Chronicle*, I will only repeat here, that for standards the Crab-stock

is the best, and for dwarfs and pyramidal trees, the Paradise stock; the first giving a vigorous and free-growing tree, and the last a short-jointed bush or pyramid, heavily furnished, as a rule, with fruiting-spurs.

Proper cultivation is an item either ignored or overlooked in the majority of attempts to start fruit-growing as a paying commercial speculation. No graver mistake can be made. First, therefore, see that your soil is right; a moderately stiff loam, resting on rock, gravel, or sand, is the best, but it should in the latter cases be not less than 2 to 3 feet thick, and in every case it should be efficiently drained; while if it can be secured, a slope to the south or south-west is beneficial. Doubtless the best fruit is grown upon cultivated ground, but this need not obtain if proper care be taken to annually enrich the surface-soil, where it is laid down to grass, by good mulchings of partially-decayed farmyard-manure. Nevertheless, it is wrong to lay down the orchard or plantation to grass on first planting, but it may as a rule be safely done after a lapse of three or more years, when, if the directions as to pruning, &c., are followed, the fruit will continue to be good in quality, and the yield remunerative.

I am well aware that my own county, Kent, is favoured in many ways for the development of this important industry, namely in soil, climate, and contiguity to the all-absorbing markets of the metropolis. Railway facilities are now great, and most of the companies have begun to see that special rates and modified methods of conveyance will pay, so that other fruit-growing centres will be able to compete with Kent, Essex, and Surrey, to say nothing of Middlesex.

Nor must we forget one among the many good things promised the farmer—light railways; though I must confess, without prejudice, as the lawyers say, I should like to have seen a few more projected lines made, if only two per cent. of those talked about! *Experience.*

(To be continued.)

NURSERY NOTES.

MESSRS. J. VEITCH AND SONS.

THE season for the Carnation has been not too favourable, and flowering is later by a fortnight than the average. We found at this nursery the usual display in the accustomed square, between the blocks of glasshouses, and passing the eye over the beds from a short distance, the effect of the numerous open flowers gave the idea of an abundance of bloom; but a close inspection revealed the inimical effects of the burning heat and general aridity of the past week. The beholder can but wonder at the high average excellence of the flowers in, as it were, the heart of London. We regret to notice the gradual extinction of the Picotee as a flower for the ordinary cultivator; and it, indeed, seems that we shall have to look to the specialists and fanciers for these lovely forms, as we now have to do for the higher forms of the florist's Pinks—and yet, neither presents any difficulties in cultivation. Almost any deeply-worked, well-manured soil—not rich half-decayed, or fresh rank manure for these, please, but the same decayed and immediately available as food for the plants, plenty of road-grit or coarse sand (sea-sand, if it can be obtained), the Carnation and Pink delighting in salt in moderation, and a bed prepared and stirred about for a month before it is planted; and raised 2 or 3 inches above the surrounding level, as well as drained otherwise from below, will suit these plants. Given these requirements and an open position, anyone may grow the whole tribe with the least amount of after trouble. In town it is advisable to purchase the plants in pots in early spring, or propagate one's own from layers and cuttings, as the case calls for, and keep the same in pots in airy, cold pits or frames over the winter, letting them freeze without fear of loss.

It is the dreadful fogs, the ever abundant smuts and dirt that kill the plants in the winter in a London garden, and the glass frame wards off some of these.

If the plants are plunged to the rim of the pots in a bed of fine coal-ashes, scarcely any water will be needed by them from the end of the month of November to that of January.

Among novelties of excellence noticed, we may make mention of the following Carnations:—Edith Ladenham (1896), a good full flower, white, one of the best of its class, and growing to a height of 2½ feet; Horace Trelawney, one of Mr. Martin Smith's raising, of a fine shade of pink; Sweet Briar, a bright tint of scarlet, very fine when it opens, one of the best; G. McKay, an excellent white, possessing stout, rounded petals, and a calyx that does not split, a free, strong bloomer, and a good "doer;" Pandelli Ralli (Mr. M. Smith), a lemon-yellow bloom, with excellence in most points; Boadicea, raised by Mr. Smith, a scarlet flower, bold and good, with a dwarf style of growth; Edward Marshall, a brilliant scarlet flower of perfect form; Sir G. Faudel Phillips (Hopper), a deep crimson flower; Miss Alice Mills, a yellow ground fancy. Most of the old favourite varieties in Carnations, such as Bendigo, Cara Roma, Queen of the Yellows, Corunna, Crombie's Pink, Alice Ayres, Mephisto, Mrs. Watts, The Dey, Czar, Joe Willett, Rose Celestial, and Hayes Scarlet, were included in the collection, they being for massing and bedding considered indispensable.

Picotees.—Wanderer (Mr. M. Smith), a yellow ground flower; Badminton (Mr. M. Smith), another fine yellow-ground, that is likely to prove a good variety, and find many admirers; Empress Eugénie, Golden Eagle, very pretty, growing to a height of 2½ feet, and Mr. Nigel, are yellow-grounds, of considerable merit, and rich and pleasing markings. Norman Carr was the best rose-edged, and Amy Robsart, a fine purple-edged Picotee, were remarked.

Growing in pots under glass are numerous varieties, and among these some very beautiful flowers were observed; as, for example, Mrs. Colby Sharpin, a full flower, with round, smooth-edged petals, of a rosy-fawn tint; Mrs. Audrey Campbell, as yet considered to be the finest yellow self; Sadik, of a rich rose-pink (Mr. M. Smith); Seagull, of the palest flesh tint, almost identical with Her Grace, but possessing a slightly deeper tint. The collection in the open beds should be in good condition for ten days longer.

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 26.—An ordinary fortnightly meeting of the Committee was held on Tuesday last in the Drill Hall, James Street, Westminster. There was a good muster of exhibits, the Hall being nicely filled. A considerable share of the space was taken up by several collections of Bamboos, including an extensive exhibit of these beautiful foliage plants, from Mr. FREEMAN-MITFORD, C.B., who showed several species not previously exhibited, and afterwards delivered an address upon the "Economic Uses of the Bamboo." Apart from the Bamboo there were many exhibits of hardy flowers, Sweet Peas, and annuals.

Groups of Ferns, Caladiums, the new Acalyphas of Messrs. SANDER, and other plants were also shown, and two Awards of Merit were made to new Roses from Messrs. W. PAUL & SON, Waltham Cross. Awards of Merit were also made to *Buddleia variabilis*, from Messrs. W. PAUL & SON; Ivy-leaved *Pelargonium* Achievement, from Mr. H. J. JONES; Carnation Isinglass from T. B. HAYWOOD, Esq.; and Carnation Lady Sophie, from Mr. F. JAPPER, Sundridge Park, Kent. First-class Certificates were recommended to two *Nymphæas* shown, from Gunnersbury House gardens; and several awards went to Bamboos above mentioned, from Mr. A. B. FREEMAN-MITFORD, C.B., and Messrs JAS. VEITCH & SONS. Orchids were very few, but there was a considerable show of fruit, including a large exhibit of Gooseberry bushes in pots, from Messrs. JAS. VEITCH & SONS, who were also recommended an Award of Merit for a new pale-coloured Raspberry, to be known as Golden Queen. Several new Strawberries were before the Fruit Committee, and to one of these from Gunton Park gardens, and named Lady Suffield, an Award of Merit was recommended.

Two First-class Certificates were obtained by Messrs T. RIVERS & SON for Early Rivers Cherry, and Early Transparent Gage Plum. A similar award was recommended to a Cabbage-Lettuce named Crystal Cabbage, from Messrs. WATKINS & SIMPSON, who had an Award of Merit for Turnip Improved Model. Various new Peas were exhibited from Chiswick, and awards were made to upwards of half-a-dozen varieties.

The exhibition of the Cactus Society that was to be held in connection with the Drill Hall meeting, was small.

Floral Committee.

Present: W. Marshall, Esq., chairman; and Messrs. John Fraser, Owen Thomas, H. B. May, R. Dean, C. J. Salter, Jas. Walker, Chas. E. Shoa, D. B. Crane, Chas. Jeffries, Herbert J. Cutbush, J. W. Barr, H. J. Jones, E. T. Cook, John Jennings, Jas. Hudson, H. Selfe-Leonard, Geo. Gordon, and J. Fraser.

Messrs. H. CANNELL & Co., Swanley, Kent, made an unusual exhibit in a collection of well-grown Succulents in pots. These were arranged with considerable care, and in such a manner that the form and colour of one species contrasted with that of another in close association with it; very few of them were in flower, but the exhibit was attractive all the same (Silver Flora Medal).

T. B. HAYWOOD, Esq., Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), exhibited a splendid crimson Carnation, named Isinglass. It is a seedling raised at Woodhatch from seed supplied by the National Carnation Society, and is decidedly the best of its kind we have seen. The flowers are large and heavy, petals extremely good and fairly numerous, but notwithstanding this the calyx shows no weakness, and beyond this the flowers are gratefully fragrant (Award of Merit).

A similar Award was made to a fine Carnation named Lady Sophie, shown by Mr. F. JAPPER, Sundridge Park, Kent.

From Messrs. W. PAUL & SONS, Waltham Cross, Herts, was a large exhibit of cut Roses, of varieties exceedingly pretty and useful; a good proportion of which we noticed were some of their own introductions. Two Awards of Merit were recommended to new varieties, viz., *Souvenir de Madame Levet*, a dwarf-growing Tea, with blooms reminding one of the colour of those of W. A. Richardson, but in the present variety the colour evenly pervades the whole flower, and may be described as rich apricot. The other new one was H. T. Charlotte Gillinot, a fine pure white, full-petalled Rose.

Messrs. W. PAUL & SON were also recommended an Award of Merit for *Buddleia variabilis*, a small but densely-flowered species of pale lilac colour (a Silver Flora Medal was awarded the group). A very fine exhibit of cut Roses was shown by C. J. GRAHAM, Esq., Leatherhead, including upwards of sixty excellent blooms (Bronze Banksian Medal).

Messrs. F. SANDER & Co., St. Albans, showed a group of fine plants of *Acalypha Sanderiana* and *A. Godeffiana*, both of which have been figured as well as described in these columns on several occasions.

Mr. J. Fitt, gr. to F. W. CAMPION, Esq., Colley Manor, Reigate, showed freely flowered sprays of *Crimson Rambler* Rose.

Mr. Jas. Hudson, gr. to LEOPOLD DE ROTHSHILD, Esq., Gunnersbury House, Acton, showed blooms of species and varieties of *Nymphæa*; and First-class Certificates were awarded in two cases, viz., to *N. odorata rosacea*, a very pretty pink flower, and distinctly fragrant; and *N. gloriosa*, one of the very best of the red or crimson-coloured *Nymphæas*; *N. tuberosa*, a large white flower; and *N. sanguinea*, a very dark-coloured bloom, were also shown.

Messrs. HURST & SON, Hounsditch, showed *Tropæolum Lobbianum*, a variety with Ivy-shaped foliage.

Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, London, N., showed a few choice hardy flowers, such as *Helenium grandicephalum*, *H. pumilum magnificum*, a very fine variety of the species; *Inula ensiflora*, &c.

A group of one hundred species and varieties of the *Pteris* group of Ferns was exhibited by Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton. These plants were very beautiful specimens, and went to show the bewildering variety of forms obtainable from a single genus of Ferns, from the handsome palmate leaves of *P. ludens*, to the infinitely divided forms of *P. serrulata*. The exhibit was deservedly awarded a Silver-gilt Flora Medal. Mr. MAY also staged *Bouvardias* in flower of the varieties *Queen of Roses* (rosy-pink colour), *Jasminoides*, having white flowers with extra long tube, and some others.

Messrs. W. CUTBUSH & SON, Highgate Nurseries, London, N., made a fine display with hardy herbaceous and other flowers, the centre of the group being composed of plants and cut blooms of *Malmalson* varieties of the Carnation. Blooms of perpetual-flowering and border Carnations in sprays were pretty also (Silver Banksian Medal).

Mr. THOS. S. WARE, Hale Farm Nurseries, Tottenham, had a group of hardy flowers, the centre of which consisted of sprays of beautiful Lilies, *L. nepalense*, *L. dalmaticum*, *L. philadelphicum*, *L. Humboldtii*, *L. pardalinum*, several distinctly marked forms of *L. auratum*, and a plant of *L. giganteum* (Silver Banksian Medal).

A fine group of hardy flowers was from Mr. M. PRITCHARD, Christchurch Nurseries, Havant, in which we noticed the white-flowered *Oenothera speciosa*, the blooms of which are pure white excepting the yellow base; the showy *Helianthus rigidus præcox*, *Coreopsis lanceolata*, and others; *Lathyrus latifolius* in white, rose, and various coloured varieties, the brilliantly coloured *L. chalcidonicum*, the variety of *Chrysanthemum maximum* known as G. H. Sage, and other interesting species including herbaceous *Phloxes* (Bronze Banksian Medal).

Messrs. BARK & SONS, King Street, Covent Garden, London, W.C., had a magnificent bank of hardy flowers, in which some choice varieties of herbaceous *Phlox* were noticeable, *Hyacinthus candicans*, *Gaillardias*, *Lychnis chalcidonica*, and *L. c. fl.-pl.*, *Monarda didyma*, the handsome *Bocconia cordata*, and some excellent varieties of *Iris* were remarked among others (Silver Banksian Medal).

Messrs. CARTER & Co., High Holborn, London, made an exhibit of a large number of varieties of Sweet Peas, and the varieties being arranged to colour, the similarity between

many was obvious, whilst the dissimilarity existing betwixt others was equally well portrayed. The system of showing close bunches in very dwarf bulb-glasses, however, is not of the best taste.

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, had a fine show of Lilies. Among these were noticed *L. Humboldtii magnificum*, varieties of *L. Thunbergianum* and *L. umbellatum*; also *L. auratum*, *L. Henryi*, *L. Browni*, *L. speciosum*, in white and coloured varieties; and the spotted *L. pardalinum*, and the dark *L. dalmaticum*. The very beautiful and richly-coloured *Hemerocallis aurantiaca* major was well shown. Messrs. WALLACE had also bunches of Border Carnations, some magnificent forms of *Iris Kämpferi*, a few species of *Brodieas*, and several varieties of *Calochorti* (Silver Flora Medal).

Messrs. DOBBIE & Co., Rothesay, N.B., had an extensive exhibit of Sweet Peas in bunches, *Violas* in sprays, and several hardy flowers, as *Lychnis chalcidonica*, *Chrysanthemum maximum*, *Anthemis tinctoria*, *Achillea Ptarmica*, "The Pearl," *Gaillardia grandiflora maxima*, and *Achillea Eupatorium*. All of these were staged well, and were commendable (Silver Flora Medal).

A group of well-grown *Caladiums*, shown by Mr. Tomlinson, gr. to R. HOFFMAN, Esq., West Dulwich, was awarded a Silver Flora Medal.

Messrs. A. W. YOUNG & Co., Stevenage Nurseries, Herts, showed hardy flowers in much variety, including a nice lot of Sweet Williams.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, again made a very pretty display of cut annuals, in which many varieties of *Lavatera*, *Coreopsis*, Sweet Peas, *Eschscholtzia*, *Stachys coccinea*, and other species were prominent. A nice collection of blooms of border, fancy, and other Carnations was shown also, and spikes several feet long of the yellow-flowered *Althea Primrose Queen*, a cross between a *Hollyhock* and *Althea ficifolia*.

Mr. H. ECKFORD, Wem, Salop, showed some new and very beautiful varieties of Sweet Peas—Duke of Westminster, purple; Robin Hood, reddish-purple; Mrs. Fitzgerald, Sadie Burpee, pure white; Othello, a very dark-coloured flower; Lady M. Ormsby-Gore, pretty cream colour; coccinea, one of the brightest-coloured Peas we have seen; and Hon. F. Bouverie, pink, were some of the best.

An Award of Merit was recommended to *Pelargonium Achievement*, shown by Mr. H. J. JONES, Ryecliff Nursery, Lewisham. It is a valuable Ivy-leaved variety, with partial character of the zonal.

BAMBOOS.

As befitted the occasion, two good representative collections of Bamboos, *Arundinarias*, and *Phyllostachys*, were shown, viz., by A. B. FREEMAN-MITFORD, C.B., Batsford Park, Moreton-in-the-Marsh, by Messrs. J. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, and a small one by Mr. GAUNTLETT, of Redruth, and M. T. WARE, Tottenham. The first was the greatest in point of numbers, and as might be expected in the matter of cleanness of leaf and stem. Coombe Wood, where the other collection hailed from being within the radius of London fog. We noted in Mr. FREEMAN-MITFORD's collection *Arundinaria racemosa*, a plant 6 feet high, said to have been not before shown; *A. Hindsii*, as well as the var. *graminea*, *A. aristata* (Award of Merit), with light green leaves and brown and brownish-green stems; *A. Fortunei*; *A. macrosperma*, a pretty, broad-leaved species; *A. Laydekeri*; *A. anceps*; *A. Falconeri*, a graceful, small-leaved species, hardy at Batsford; *A. falcata*, not reputed hardy there; *A. nobilis*; *A. palmata*; *A. pygmaea*; *A. Veitchii*; *A. metallica* (Awards of Merit), a seedling from *A. Laydekeri*, raised from home-grown seed; *A. chrysantha*, and *A. nitida*, to which a First-class Certificate was awarded. Of *Phyllostachys* there were *Castillinis*, with variegated leaves; *P. violascens*, a very graceful species; *P. fulva*, new from Japan (*A. M.*) *P. Quiloi*, a fine example; *P. heterocycla*, *P. aurea*, *P. Boryana*, and *P. Henonis*. The Bamboos consisted of *B. tessellata*, *B. Nagashima*, a species with rather broad leaves of a deep tint of green; and *B. disticha*. The Society's Gold Medal was awarded for the collection.

Messrs. J. VEITCH & SONS exhibited a relatively large collection of Bamboos in small and large well-grown examples. We noted the handsome black-stemmed *Arundinaria nitida*, *A. Simoni* var. *striata*, the varietal name being due to the white median stripe apparent in the younger leaves; *A. Veitchii*, a dwarf species, with broad leaves; *A. Hindsii* var. *graminea*, with narrow grass-like leaves, and slight green stems; *A. japonica* (Metake), tall, robust, with leaves 1 to 1½ inch wide and 8 inches long. The handsome yellow variegated *A. Fortunei aurea* (auricoma), of dwarf habit and a fine mass of *A. nitida*, which was awarded a First-class Certificate; it was 6 feet high, and as much in width; *A. Fortunei variegata*, with silvery lines on the green leaves; and *A. pumila*. Of *Bambusa*, there were *disticha*, a very distinct species, with very dark green foliage; *B. palmata*, and *B. Ragamowski*. The species of *Phyllostachys* included *nigra*, *Castillionis* (*A. M.*), *viridis glaucescens*, *henonis*, *Quiloi*, *nigro-punctata*, *aurea*, and *Kumasana* (*viminalis*), a very hardy, short-leaved, compact, dark green species. A Silver-gilt Flora Medal was awarded the collection.

Mr. V. N. GAUNTLETT, The Bamboo Nurseries, Redruth, Cornwall, showed *Phyllostachys aurea*, *Arundinaria Simoni*, in fine large canes, 15 feet long; *A. nobilis*, equally big; *A. Falconeri*, *Phyllostachys nigra*, and *Arundinaria Simoni striata*. These appeared to be stems with foliage cut from living plants. A Silver Banksian Medal was awarded.

Mr. T. WARE's small collection of Bamboos consisted of but a few species in well-cultivated examples. A Silver Banksian Medal was Awarded.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. Little, N. C. Cookson, J. Gabriel, H. J. Chapman, F. J. Thorne, W. H. Young, T. W. Bond, W. Cobb, F. Mason, H. M. Pollett, H. Ballantine, and Reginald Young.

In point of culture, the most remarkable exhibit was a noble plant of a very fine form of *Odontoglossum coronarium*, sent by W. G. GROVES, Esq., Holehird, Windermere, and for which he was awarded a Silver Flora Medal. The plant, which was on a teak raft 3 feet by 2 feet, had several strong leading growths; and bore two grand spikes, numbering over fifty flowers. The flowers were longer than usual in size, and of a shining brown hue, with some yellow freckling on the petals, and a bright yellow lip.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, showed a select group of fine hybrid Orchids, of which the most remarkable was the handsome *Laelio-Cattleya* × *Ingrami gigantea* (L. *pumila* ♀, *Dowiana* ♂), whose flowers far exceeded in size anything deemed probable in a *Laelia pumila* hybrid. The sepals and petals were of a bright rose tint, the petals measuring nearly 8 inches across. The showy labellum was maroon-purple, with orange lines at the base (First-class Certificate). Another fine thing in Messrs. Veitch's group was *Laelio-Cattleya* × *callistoglossa ignescens* (C. *Warscewiczii* *Sanderiana* × *Laelia purpurata*), perhaps the showiest of their many fine crosses; and remarkable were *Cattleya* × *Enid* (Mossie ♀, × *Warscewiczii* ♂), a light flower, well intermediate between the parents in character *Laelio-Cattleya* × *Amesiana* (L. *crispa* × C. *maxima*), one of the fine early crosses, with white flowers, having a rich rose-purple front to the lip; L.-C. × *Lucilia* (L.-C. × *Schilleriana* ♀, × C. *Dowiana* ♂), flowers white, with rose markings on the petals, and a very bright dark purple lip; L.-C. × *Zephyra*, with pale yellow flowers, and rose-coloured front to the lip; and *Masdevallia* × *Imogene* (Schlimi ♀, × *Veitchii* ♂), a pretty new hybrid, preserving the form and several-flowered spike of M. *Schlimi*, with the reddish colour imparted by the other parent (Award of Merit).

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr., Mr. H. J. Chapman), showed an inflorescence of *Laelio-Cattleya* × *Schilleriana*, Cambridge Lodge variety, which may be a secondary cross of L.-C. *Schilleriana* with L. *purpurata*. The sepals and petals were white, tinged with lilac; the lip, which differed from typical L.-C. *Schilleriana* in having the margin more circularly arranged, and exhibiting little separation of the middle and side lobes, was of a glowing crimson purple, the base, which is white, extending into two rounded lobes on the sides (Award of Merit).

Messrs. HUGH LOW & CO., Bush Hill Park, staged a small group, in which were two very clear white forms of *Cattleya Gaskelliana* alba, some fine forms of C. *Warscewiczii*, and C. *Mendeli*, a handsomely spotted *Odontoglossum crispum*, and a well-flowered *Vanda coerulescens*.

WALTER C. CLARK, Esq., Orleans House, Sefton Park, Liverpool, showed *Cypripedium* × Mrs. Walter Clark (Ashburtonie *expansum* × *Stonei*), an effective hybrid with the same general appearance as C. × *Morganiana*. Captain G. W. LAW-SCHOFIELD, New-Hall-Hey, Rawtenstall, Manchester (gr., Mr. Schill), showed a very richly coloured form of *Cattleya Warscewiczii*, in which the light patches usually seen on the lip were much reduced, and in the veining of the lip was a slight suggestion of C. × *Hardyana*.

Messrs. F. SANDER & CO., St. Albans, showed *Cypripedium* × *Orion* (*Selligerum majus* × *Rothschildianum*), with long arching petals of a cream-white, with chocolate-coloured blotches.

DE B. CRAWSHAW, Esq., Rosefield, Sevenoaks (gr., Mr. S. Cooke), showed *Cattleya Gaskelliana*, Crawshaw's variety, a very distinct form, with uniform light rose flowers, without the usual darker colour on the lip, the base of which was white and yellow. NORMAN C. COOKSON, Esq., Oakwood Wylam, Northumberland (gr., Mr. W. Murray), showed *Cattleya* × *Lord Rothschild* (*Gaskelliana* × *aurea*), a very pretty and delightfully fragrant flower.

Fruit Committee.

Present: Philip Crowley, Esq., Chairman; and Messrs. Geo. Bunyard, T. Francis Rivers, W. Poupert, A. F. Barron, T. Gleeson, T. J. Saltmarsh, Jas. H. Veitch, A. H. Pearson, Alex. Dean, C. Herrin, J. W. Bates, Geo. Wythes, J. Smith, F. Q. Lane, J. Willard, and W. H. Divers.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, showed fruits of eight varieties of Cherries, viz., Black Eagle, Baumann's May, Governor Wood, White Heart, Kentish, Early Red Gem, Bigarreau Napoleon, and Cleveland Bigarreau. Also a fine lot of fruits of the splendidly-flavoured, medium-sized Strawberry, Veitch's Perfection; also fruits of Frogmore Late Pine, Bilton Pine, Lord Suffield, Laxton's Latest of All, Waterloo, &c. Messrs. VEITCH were also recommended an Award of Merit for Raspberry Golden Queen, obtained from a cross between *Rubus laciniatus* and Raspberry Superlative. The fruits are pale in colour, agreeably acid, and apparently the plant has a free-bearing habit. An exhibit of Gooseberry bushes in pots from Messrs. JAS. VEITCH & SONS, comprised about fifty varieties, and illustrated the three systems of training known as "The Fan," the "Cup-shaped," and the Standard. We reproduced last year a bush trained in each of these methods, after a similar exhibit from Messrs. VEITCH to that of Tuesday last. The new varieties that were given Awards of Merit last season, viz., Langley Gage,

a good-sized yellow fruit, and Langley Beauty, a smaller fruit, and green in colour, were represented by fan-trained bushes. Both of these Gooseberries are fine dessert varieties, the latter being particularly so. Of the large number of other varieties, we can only give the best half-dozen of dessert and kitchen varieties respectively. Dessert: Early Green Hairy, Bright Venus, Whitesmith, Broom Girl, Golden Lion, and Red Champagne. Culinary: Surprise, Forester, Mitre, Tom Joiner, Trumpeter, and Clayton (Silver-gilt Knightian Medal).

Mr. OWEN THOMAS, Royal Gardens, Frogmore, showed eight large and handsome fruits of Melon Lord Edward Cavendish, a yellow-skinned, white-fleshed, juicy variety, that was given an Award of Merit in April last.

Mr. W. ALAN, gr. to Lord SUFFIELD, Gunton Park, Norwich, showed Strawberry Lady Suffield, said to be obtained from a cross between Lord Suffield and Empress of India, but distinct from both. A batch of yearling plants from a north border, and a box of fruits were shown, in comparison with fruits of the variety Lord Suffield. It ripens about a week before Lord Suffield, is a dark-coloured fruit, seeds very prominent upon the surface, Coxcomb in shape, of good flavour, and apparently a free bearer.

Excellent white Turnips of the Model type were shown from the Chiswick Gardens. The variety is known as New Model, and belongs to Messrs. WATKINS & SIMPSON (Award of Merit). A fine Lettuce to be known as Crystal Cabbage, also from Chiswick, and belonging to Messrs. Watkins & Simpson, was recommended a First-class Certificate. Of the culinary Peas that have been on trial at Chiswick, several varieties were sent up for ratification of Awards of Merit previously recommended by the committee at Chiswick. These were Bruce and Prior, from Mr. H. ECKFORD, Wem, Salop; Honeydew and Saccharine, from Mr. SIM; Sutton's Continuity, from Messrs. SUTTON & SONS, Reading; Hartford Success, from Messrs. NUTTING & SON, Southwark Street, London, S.E.; Manfield Show, from Messrs. WRIGHT & SON. A fine collection of about fifty dishes of culinary Peas from Messrs. W. W. JOHNSON & SONS, Ltd., Boston, Lincolnshire, was awarded a Silver Banksian Medal.

Messrs. T. RIVERS & SON, Sawbridgeworth, exhibited some excellent Cherries in variety, presumably from the orchard-house, and were recommended a First-class Certificate for the variety Early Rivers. A similar award was obtained by Early Transparent Gage Plum, from Sawbridgeworth. The fruits are medium-sized, and exceedingly pretty in appearance. A Silver Banksian Medal was awarded the collection of fruits.

A Cultural Commendation was deservedly awarded to Mr. W. H. DIVERS, gr. to the Duke of RUTLAND, Belvoir Castle, Grantham, who showed monstrously large, well-finished fruits of Strawberries Dr. Hogg, Gunton Park, and Waterloo. The fruits of Waterloo were especially remarkable.

Messrs. LAXTON BROS., Bedford, showed several new Strawberries, including one known as Filbasket, obtained from a cross between Royal Sovereign and Latest of All; it is a prodigious cropper, as evidenced by a few two-year-old plants exhibited. Trafalgar, also from Messrs. LAXTON, is a new, deep-coloured Strawberry of very large size, and it may prove tempting as a market fruit.

Strawberries were also shown by Mr. CARMICHAEL, 14, Pitt Street, Edinburgh. The varieties were Princess of Wales, Britannia, and Queen of Denmark. The fruits of each are small or medium-sized, but the flavour did not sufficiently impress the committee to grant any awards.

The Lecture.

THE ECONOMIC USES OF BAMBOOS.

No one knows more about Bamboos or their cultivation than Mr. A. B. FREEMAN-MITFORD, C.B., and it was a very interested audience that assembled at the Drill Hall after the meeting of the various committees to hear a lecture upon "The Economic Uses of Bamboos" from a person so well qualified to impart the information.

Mr. Freeman-Mitford was enthusiastic from his opening paragraph until the close of his paper. Speaking of the Burmese Bamboo (*Dendrocalamus giganteus*), reference was made to its splendid proportions. In Ceylon it grows as high as 135 feet, and its stems measure 27 inches in circumference. This is the greatest of the Bamboos, but its economic value is much inferior to that of many other species. It is quite hollow, and its stems are mere shells, whilst the fibre is spongy. It is of no use if permitted to dry, but as water-pipes the stems serve well, or as flower-pots. A splendid piece, which Mr. Freeman-Mitford exhibited to his audience, was from the Peradenya Botanic Gardens, and had been soaked in linseed-oil during its sea passage, to prevent it from splitting. We understood the lecturer to say that in Ceylon, where the Bamboos would grow in the most luxuriant manner, the only two species that had been planted were *Bambusa vulgaris*, and the Burmese species above remarked upon. Yet they had been planted for utility, and compared with the rest of the species were probably of the least value for general purposes.

The Cocoa-nut Palm (*Cocos nucifera*), was mentioned as being the only plant that could compete with the Bamboo for its general usefulness, and Europe as the only quarter of the globe where some species or other is not found. One species only appears at an elevation of 13,000 feet above sea level in the Eastern chain of the Ganges, and then but in irregular patches, whilst at 15,000 feet elevation, it forms the principal vegetation.

Reference was made to the habit of certain species having solid or hollow stems, according to whether they are grown in dry or moist districts. It could hardly be estimated,

said Mr. Freeman-Mitford, what the Bamboo is to the Chinaman. "It carried his mother a bride to the altar; it will carry him to the grave, and meanwhile will provide his house and almost furnish it." Mr. Freeman-Mitford, referring to the Tortoise Shell Bamboo, which has been described as *P. heterocycla*, said that the curious growth was a malformation only, the result of unsuitable soil and surroundings. In proof of this it was stated that *P. aurea* occasionally was so constructed, and a specimen was shown.

Alluding to the new species of *Arundinaria* exhibited on Tuesday, Mr. Freeman-Mitford said that *A. metallica* would be very valuable as an ornamental plant; it was more vigorous even than *A. Veitchii*. *A. aristata* would also prove a capital plant. *A. Veitchii*, *A. metallica*, and *Bambusa tessellata* were specially recommended for the planting of game-covers. The question was next discussed whether or not the cultivation of Bamboos for economic purposes was ever likely to become an industry in Britain. For many reasons, Mr. Freeman-Mitford declined to believe it will, but many of the colonies were finely adapted for their cultivation, and it needed that those whose business it was should see to it, that the species most useful economically, were selected for planting in such places. Coming to the prices paid for Bamboos imported into England, and the degree of remuneration there was to the growers who export them hither, Mr. Freeman-Mitford regretted that very little information was forthcoming.

Sir J. T. D. Llewellyn, Bart., who occupied the chair, advised the audience to visit the collection of Bamboos at the Royal Gardens, Kew, and observe how much they had improved, and how exceedingly graceful the species are. "Above all," said Sir J. T. D. Llewellyn, "experiment with Bamboos in your own gardens."

Mr. Harry Veitch said that his experience had shown him that Bamboos would flourish in almost any kind of soil, and in dry situations. Recently, when shrubs were almost dying from drought, the Bamboos remained healthy and in growth. If they were given a mulching in late autumn, the beneficial effect upon their growth the following year was most marked. He considered that the Bamboos were the very finest plants for creating good effects in the pleasure-grounds, that will ever be introduced into this country.

Dr. M. T. Masters, F.R.S., recommended that *Arundinaria japonica* be planted in London and other large towns. The species will succeed in Whitechapel or in Kensington.

The following Bamboos have been figured in the *Gardeners' Chronicle*:—*Arundinaria japonica*, p. 185, vol. ii., 1895; *A. nitida*, p. 179, vol. ii., 1895; *A. Simoni*, p. 181, vol. ii., 1895; *A. Veitchii*, p. 169, i., 1894; *Dendrocalamus giganteus* (Ceylon Giant), p. 275, vol. ii., 1881; *D. sikkimensis*, p. 793, vol. vii., 1890, and Dec. 3, 1892; *Bambusa heterocycla* (with oblique nodes), p. 559, May 5, 1894; *B. palmata*, p. 641, vol. vii., 1890; *B. quadrangularis tessellata*, p. 189, vol. ii., 1895; *Phyllostachys kumasakae*, p. 369, vol. ii., 1894; *P. nigra*, p. 185, vol. ii., 1895; *P. Quiloi*, p. 183, vol. ii., 1895; *P. viridi glaucescens*, p. 443, vol. i., 1899; and p. 183, vol. ii., 1895; and others.

EAST COWES.

JULY 20.—A meeting of the East Cowes Horticultural Improvement Society was held on the above date, Mr. G. GROVES, J.P., presiding. After a few introductory remarks, he called upon Mr. S. HEATON, Horticultural Instructor for the Isle of Wight County Council, to give the last of a series of gardening lectures, the subject being "Begonias: Tuberos, Rex, and Fibrous-rooted." The lecturer dealt at some length with the cultural requirements, and at the close questions were invited. The chairman, in moving a vote of thanks to Mr. Heaton, said that the lectures had been most interesting and instructive, and he hoped that at an early date they would be able to have another and a longer course of lectures from Mr. Heaton, who was master of his subject. The proposition was carried unanimously.

THE PEOPLE'S PALACE HORTICULTURAL.

JULY 21, 22, 23.—The summer exhibition of this Society was held on the above dates, and was the means of bringing together a display much in advance of anything seen before, which is one of the best testimonies to the importance of the work being done by the Society in the East End.

The People's Palace is well adapted for flower shows of this character, being both commodious and central, as well as being known; and spacious as the hall appears when unoccupied it is soon filled when a show is held, only bare space being left for locomotion. The district is divided into two sections: those living in the districts more favourable to plant-culture exhibit by themselves, and those in the more crowded districts by themselves. The wisdom of this arrangement is seen when the plants are brought to the Hall, the development of those from the more open parts being superior to those from the more congested neighbourhoods.

In the open section there were four entries for groups of plants covering a space of 36 feet, and two in the class covering half the space. In the case of the congested districts, there were four entries in the class for 18 feet, and in that for a collection of dwarf plants to fill a table space of 9 feet there were nine entries. As all the plants are grown in greenhouses mainly of home construction, it follows that there is a goodly number of these. Flowering plants were represented by Fuchsias, show and zonal Pelargoniums, Begonias,

Lilium var. *longiflorum* Harrisii, a Canna or two, Balsams, Petunias, Nicotiana affinis, &c. Of foliaged plants, Palms, Araucaria excelsa, Aspidistra, Coleus, Ficus elastica, &c., while some good Ferns were staged. Fuchsias, and also Begonias, shown in collections of four, were quite praiseworthy. Some remarkable window plants were staged, especially huge fan-trained Fuchsias. Hanging window plants were mainly the blue *Campanula fragilis*, or the white *Isophylla alba*. Some good bunches of garden flowers were staged, also of Sweet Williams, and there were also sprays of Violas and Pansies. Some charming table decorations, done with Iceland Poppies, were shown by Mrs. VINCE of Leyton. Even baskets of vegetables, grown in the East End, were shown, the best from a railway porter, who has a piece of garden by the side of a railway. There were plenty of plants from the members of the children's branch of the society.

Miscellaneous collections from supporters of the Society greatly helped the display. The President of the Society, the Duke of FIFE, sent a very fine group of plants, set up upon a large central stage. From Eaton Hall the Duke of WESTMINSTER sent a grand lot of cut blooms of Malmaison Carnations. A. E. HILLS, Esq., sent from Monk-hams a large ground group of plants; and the same came from LUDWIG MOND, Esq. Mrs. HOLMES, of the Frampton Park Nurseries, set up a fine group of plants. Messrs. W. PAUL & SON a large, varied, and very fine collection of Roses. Messrs. BARR & SON sent huge bunches of hardy cut flowers; the Duke of NORFOLK sent plants, and Mr. PRITCHARD, Forest Gate, an extremel interesting collection of Cacti.

SOUTHERN COUNTIES CARNATION.

JULY 21.—This Society was brought into existence in August last, through the exertions of Mr. William Garton, of Argyll House, Woolston, and it has for its president Sir J. S. Barrington Simeon, Bart., M.P.

Already the Society numbers some 200 members, and it may now be taken for granted that it has been started on a good foundation. An evidence of that was given in the first annual show, which was held in the grounds of Argyll House, Woolston (the residence of the hon. secretary and treasurer), on the above date. The exhibition, both as to dimensions and quality, far exceeded the most sanguine expectations, and Mr. Garton and those who have assisted him may be congratulated on the success of the first show. The season has been a bad one, the Carnations being late; there is also the show of the National Society on Wednesday next, which no doubt prevented several well-known growers from competing, but still, there was a capital exhibition.

LIST OF AWARDS.

Carnations, flakes, and bizzarres, twelve blooms (dissimilar), 1st, J. DOUGLAS, Great Bookham; 2nd, W. GARTON, jun., Woolston. Six blooms, 1st, F. HOOPER, Bath; 2nd, J. J. KEEN, Southampton.

White-ground Picotees (twelve blooms), 1st, J. DOUGLAS. Six blooms, 1st, S. A. WENT, Thames Ditton; 2nd, F. HOOPER.

Yellow-ground Picotees (twelve blooms), 1st, J. DOUGLAS; 2nd, C. TURNER, Slough. Six blooms, 1st, F. HOOPER; 2nd, C. PHILLIPS.

Yellow-ground and fancy Carnations (twelve), 1st, C. TURNER; 2nd, W. GARTON, Jun. Six, 1st, S. A. WENT; 2nd, A. J. ROWBERRY.

Selves (twelve), 1st, W. GARTON, Jun.; 2nd, C. TURNER. Six, 1st, S. A. WENT; 2nd, F. A. WELLESLEY.

Six Carnation blooms (mixed varieties of Picotees, fancies, and selves), open to those who had not before won a prize, 1st, E. H. BUCKLAND; 2nd, Mrs. WHITELEY, Downton.

Premier Carnations (bizarre or flame), J. DOUGLAS. Self, S. A. WENT. Fancy, C. TURNER.

Premier Picotees, white ground, J. DOUGLAS; yellow ground, J. DOUGLAS.

Twelve self or fancy blooms (nurserymen or amateurs), Silver Cup, 1st, J. DOUGLAS; 2nd, E. C. GOBLE.

Bouquet of Carnations or Picotees, 1st, B. LADHAMS; 2nd, E. C. GOBLE.

Spray of Carnations or Picotees, 1st, E. C. GOBLE; 2nd, A. J. ROWBERRY.

Vase of Carnations or Picotees, 1st, Miss E. WADMORE; 2nd, W. PALMER.

NATIONAL CARNATION AND PICOTEE.

JULY 27.—There is no pause in the progress of the Carnation in the estimation of the flower-loving public. Gardens in which the Carnation is plentifully grown over-flow with the spicy flower. It is essentially the July flower; no other can compare with it at this season of the year, when the fragrant Rose is fast losing much of the height of its summer beauty. Not only is the Carnation extensively grown, but the flower is largely utilised for a variety of decorative purposes.

The various uses to which the Carnation can be put, and the growing liking for the flower, have operated to strengthen the Society, and bring many new members to its ranks, and this despite the fact that societies for the promotion of Carnation-culture are springing up in different parts of the country.

The exhibition held at the Crystal Palace on the above date, though an extensive one, for the minor classes filled well, fell behind shows which have gone before, and

more especially in the quality of the bloom of the bizarre and flaked varieties. A few flowers were too old, many were too young, they had not opened kindly, while the cold nights not only had a retarding effect, but produced roughness and thinness, and purity of the ground colour was lacking. Growers from all parts were agreed that the season was one of the most trying for those desirous of exhibiting which had been experienced for years past, and this was observed in the fewer entries in some of the leading classes. But the flowers were seen to the best advantage arranged along the nave of the Palace of Glass, and the light was excellent.

CARNATIONS, BIZZARRES AND FLAKES.

There were three competitors with twenty-four blooms, not less than twelve varieties, Mr. M. ROWAN, Manor Street, Clapham, taking the 1st prize with some good flowers for the season, the purity of the ground colours being one of the chief features. He had of S.B.'s, Admiral Curzon, Robert Lord, and Robert Houlgrave; C.B.'s, J. S. Hedderly and Master Fred; P.P.B.'s, William Skirving and Sarah Payne; P.F., Gordon Lewis and George Melville; S.F., Constance Graham and Sportsman, as the leading blooms. Mr. J. DOUGLAS, The Nurseries, Great Bookham, was 2nd, chief among his flowers were S.B., Mrs. Bewick, Duke of York, Mrs. Douglas, and Dr. Hogg; C.B., Master Fred; S.F., Guardsman, Flamingo, and Huntsman; P.F., Agricola, Mrs. Douglas, and Gordon Lewis; R.F., William of Wykeham and Mrs. Rowan. 3rd, Mr. C. TURNER, Slough.

There were five entries of twelve blooms. Messrs. THOMSON & Co., Sparkhill, Birmingham, were 1st, with S.B., R. Houlgrave; C.B., Master Fred, Lord Salisbury, J. D. Hextall, and J. S. Hedderly; P.F., Maggie, Gordon Lewis, and Vulcan; S.F., Guardsman and Sportsman; R.F., Mentor and Mrs. May. Mr. F. A. WELLESLEY, Woking, was 2nd. He had S.B., R. Houlgrave; P.F., Charles Henwood; R.F., Thalia and Lady Mary Currie; S.F., Matador. 3rd, Mr. C. PHILLIPS, Bracnell.

There were nine stands of six blooms. Mr. A. R. BROWN, Handsworth, Birmingham, came 1st, with S.B., R. Lord and Evan Edwards; C.B., J. S. Hedderly; S.F., Sportsman; R.F., Merton. 2nd, Mr. F. HOOPER, Bath. 3rd, Mr. GEO. CHAUNDY, Oxford.

Self Carnations were a most imposing feature; they were numerous, and, in a few cases, very fine, the season appearing to have suited them better than the bizarre and flakes. MARTIN R. SMITH, Esq., Hayes (gr., Mr. C. Blick), was 1st, with some superb blooms, having, of maroon shades, Sir Bevis, Friar Tuck, and Sir F. Drake; crimson and scarlet: Mrs. Gray Buchanan, and Firebrand; rose: Mrs. A. Norman, Enchantress, Joan of Arc, and Exile; yellow: Cecilia, Falcon, and Miss Julia Harbord; blush and white, Kelpie, Hildegard, Helmsman, Purity, and Cordelia. Mr. J. DOUGLAS was 2nd, with some fine blooms, but they were unnamed. 3rd, Mr. TURNER, whose leading blooms were Little John, Mrs. R. Hole, Sir Guy, Germania, Duchess of Fife, Gold Mine, and Rose Unique.

The best stand of twelve was a very fine lot of blooms from Messrs. THOMSON & Co., who had Her Grace, Exile, Mrs. E. Hambro, Percy Conquest, Ruby, Germania, Nabob, Britannia, &c.; 2nd, Mr. C. PHILLIPS; 3rd, Mr. J. A. ROWBERRY, Woodford.

There were twenty exhibitors of six selfs, Mr. A. R. BROWN taking the 1st prizes with Royalty, Mrs. E. Hambro, Miss Audrey Campbell, Mrs. J. Douglas, Negress, and a seedling; 2nd, Mr. W. GARTON, jun., Woolston, Southampton; 3rd, Mr. R. C. CARTWRIGHT, Birmingham.

FANCIES.

Equally fine were these varieties, which may be said to include everything outside the bizzarres and flakes that is not a self or a yellow ground. Here again Mr. M. R. SMITH was 1st with a superb stand of flowers, which comprised Aglaia, Mulceter, St. Gatien, The Cid, Merry Duchess, Goldylocks, Elaine, Renegade, Maid of Honour, Zingari, Alexandra, Electra, Eothen, Allegra, Fairy, Guinevere, Persimmon, Lord Lieutenant, Don Carlos, and Hidalgo; 2nd, Mr. C. TURNER, who had smaller but well finished blooms of The Gift, George Craikshank, Potentate, Thos. Ayres, Primrose Queen, Alice Ayres, &c. 3rd, Mr. J. DOUGLAS.

With twelve blooms, Mr. A. J. ROWBERRY was 1st, Mr. C. PHILLIPS 2nd, and Mr. J. WALKER, Thame, 3rd.

With six blooms, Messrs. THOMSON & Co. were 1st with capital blooms of Cardinal Wolsey, Voltaire, Golden Eagle, Monarch, Miss M. Hill, and Socrates. 2nd, Mr. J. W. FOULKES, Chester.

A supplementary class for six selfs, one variety, brought seventeen entries, Mr. R. SYDENHAM, Birmingham, taking the 1st prize with splendid blooms of Cecilia, yellow self; Mr. J. DOUGLAS was 2nd with Mrs. Eric Hambro, white; and Mr. C. PHILLIPS 3rd with Regina, a yellow self. Also a class for six Fancies, one variety: Mr. R. SYDENHAM was 1st with Hidalgo; Mr. A. W. JONES, Handsworth, was 2nd with Golden Eagle.

Of single blooms of Carnations, there was as usual a considerable number. Mr. R. SYDENHAM, Birmingham, had the best S.B. in Richard Monk, a fine new variety of great promise, followed by R. Houlgrave and R. Lord; Mr. SYDENHAM also had the best C.B. in Master Fred, next to it coming J. D. Hextall. The best P.P.B. was William Skirving. Mr. SYDENHAM again taking the lead, Mr. M. ROWAN had the best P.F. in Gordon Lewis, George Melville, and Maggie, following in the order of merit; S.F. John Wormald, a new variety of last year, shown by Mr. R. SYDENHAM, and Sportsman; R.F. Merton, and Mrs. Rowan. White selfs: Mrs. Eric Hambro, The Bride, and Crystabel. Rose selfs: Exile, Royalty, and Perfection. Scarlet selfs: James Douglas, The

Cadi, and Lady Hindlip. Maroon selfs: Uncle Tom, Man-cunian, and Labby. Yellow selfs: Miss A. Campbell, Miss Wilmot, and Regina. Buff selfs: Mrs. R. Hole, a very fine bloom, being shown by Mr. TURNER, The Dyak, and Midas. Fancies: Voltaire, Monarch, and Eldorado.

Premier Blooms.—The selection of these is always a task of some labour. The premier bizarre was S. B. Admiral Curzon in Mr. M. ROWAN's twenty-four blooms, a variety which has stood for fifty years, and yet often comes out at the head of its class. The premier flake was Flamingo, S. F., shown by Mr. JAS. DOUGLAS. The premier self was Cecilia, a very fine yellow, shown by Mr. M. R. SMITH. The premier fancy was Hidalgo, also shown by Mr. SMITH.

Picotees.—These appeared to be on the whole better than the Carnations, as they were generally more refined, though there were many undeveloped flowers. The best twenty-four blooms in not less than twelve varieties came from Mr. C. TURNER, who had H. Red, E. Brunette, L. Red, E. Acme, and Mrs. Gorton; L. P. E. Mary, and Seedlings; H. rose E. Clio, Duchess of York, and Madame Richer; L. red E. Favourite, and Mrs. Payne; several seedlings were also shown. 2nd, Mr. J. DOUGLAS.

There were three stands of twelve varieties, Messrs. THOMSON & Co. staging a good dozen, chief among them H. red E. Brunette and Isabel Lakin; L. red E. Thomas Williams; H. P. E. Medhurst's Seedling; L. P. E. Somerhill, Mrs. Gorton, and Mrs. Openshaw; H. rose E. Lady Louisa; L. rose E. Mrs. Payne. 2nd, Mr. F. A. WELLESLEY, Woking.

There were twelve entries of six varieties, Mr. A. K. BROWN taking the 1st prize with H. P. E. Medhurst's Seedling; L. P. E. Henry Kenyon, in very fine form; H. rose E. Mrs. A. K. Brown, very fine; L. rose E. Mrs. Burnett, and Amy. 2nd, Mr. R. C. CARTWRIGHT.

The yellow-ground Picotees were highly attractive. The best twelve came from Mr. M. R. SMITH, a really superb stand, which comprised Duchess Lily, Badminton, Hygera, Lady Bristol, very fine indeed; Dinorah, His Excellency, Wanderer, also very fine; Duke of Alva, Volage, Vampire, Edith, and Fashion, which may be taken as representing Mr. SMITH's latest productions. Mr. C. TURNER was a good 2nd. 3rd, Mr. J. DOUGLAS.

Mr. GEORGE CHAUNDY, Oxford, had the best twelve blooms: Voltaire, Mr. Nigel, Agnes Chambers, El Dorado, Golden Eagle, and Sport were the best. 2nd, Messrs. THOMSON & Co.; 3rd, Mr. S. A. WENDT, Thames Ditton.

Picotees were also largely represented in the classes for single blooms. H. red E. Isabel Lakin took all the leading prizes; Mrs. Gorton was the best L. red E., followed by Thomas William and Lena; H. P. E. Medhurst's Seedling, L. P. E. Henry Kenyon, which took the first three prizes; and Somerhill, H. rose E. Madeline, Lady Louisa, and Little Phil; L. rose E. Rosie Sydenham, H. Scarlet E. Mrs. Sharp, Duchess of Albany, and Mrs. A. R. Brown; L. scarlet E. Favourite, Fortrose, and Lady Jane Churchill; Yellow-grounds, Wanderer, fine deep yellow-ground; and Mrs. R. Sydenham. The premier Picotee was H. scarlet E., shown by Mr. C. TURNER; the premier L. edge, Somerhill L. purple from Messrs. THOMSON & Co.; the premier G. G., Mrs. Douglas, from Mr. C. TURNER.

The next seven classes were for cut-blooms, exhibited without dressing or cards, the object being to exhibit the flowers as cut. With very few exceptions the blooms were small and ill-formed.

The main object of these classes appears to be as expressed by Mr. M. R. SMITH at the luncheon, to induce persons to take up the cultivation of the Carnation and Picotee for exhibition, to commence with these classes, and so be led on to show with dressed flowers in the more important sections. It was this fact which Mr. SMITH requested the reporters of the gardening papers to convey to the public, more especially as he thought these classes were not reported so fully as Mr. SMITH thinks they should be. So long as anything in the way of a Carnation or Picotee is admissible to these classes, however small or undeveloped, so will their importance be minimised.

Plants in Pots.—The best twelve specimens of any class came from Mr. M. R. SMITH, finely grown and well bloomed; they consisted of Sir Bevis, dark self; Chieftain, Endymion and Mrs. A. Gilbey, rose; Vesuvius, scarlet, very fine; Her Grace, blush; Cordelia, white; and Venus, yellow. Mr. J. DOUGLAS was 2nd, also with good specimens; included were Sappho, rose; Mrs. Jas. Douglas, rather darker; Helmsman, and The Briton, white; and of Y. G. and fancies, R. land, Mrs. Tremayne, Mohican, and Dervish.

The best specimen was Y. G. Golden Eagle, from Mr. SMITH; Mr. DOUGLAS coming 2nd with Saul, a yellow self.

The only group of plants in pots occupying a space of 50 feet came also from Mr. SMITH, and included generally a splendid lot of yearlings. Mr. J. DOUGLAS had the best 30 feet group.

Floral Decorations in Carnations.—The best dinner-table decoration was by Mr. H. ROGERS, Woodbridge, and consisted of pink Carnation set up with light Fern-fronds, grasses, and Asparagus; THE MORTEN STORES, LTD., Norwood, were 2nd. The best vase was from Mr. S. A. WENDT, fine blooms of various colours, beautifully fresh, were prettily arranged with appropriate foliage. Mr. BLICK had the best three sprays. Pink, white, and yellow Carnations were used. Button-holes were numerous, Mr. BLICK taking the 1st prize, and Mr. ROGERS the 2nd.

The Martin Smith prizes for bunches of Carnations grown in borders brought, as usual, a good competition. The best bunch of one variety was Jim Smyth, vivid scarlet, from Mr. H. G. SMYTH, Bloomsbury. Mr. J. COLLINS, Woodbridge, was 2nd. With six bunches of self-coloured varieties, Mr. J.

EUSTON, The Gardens, Great Gearies, Ilford, was 1st. Mr. WEGUELIN had the best nine bunches of flaked bizarre or fancy varieties, mainly white and yellow.

Certificates of Merit were awarded to the following new varieties of Carnations:—Cecilia, yellow self; Goldlocks, a very fine yellow ground, flaked and edged with scarlet; Enchantress, a salmon-scarlet self; Grand Duke, scarlet self; Benbow, an apricot self; Edith, a yellow-ground Picotee; Etna, a bright scarlet self; and Lady Bristol, a very pleasing yellow ground, all from the collection of Mr. MARTIN R. SMITH; also to Lady Frances Pratt, a dark crimson-maroon self of fine quality, from Mr. E. CHARRINGTON.

Miscellaneous.—Mr. J. DOUGLAS had a table of blooms of new and choice Carnations; Mr. HENRY ECKFORD fifty bunches of Sweet Peas; and Messrs. W. CUTBUSH & SONS, Highgate, Carnations, &c.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Phaius and Calanthes.—Such plants as *Phaius grandifolius*, *P. Wallichii*, *P. Blumei*, *P. assamicus*, *P. Sanderianus*, *P. bicolor*; the distinct hybrids, *P. Marthæ*, *P. Owenianus*, *P. Owenæ*, and *Phaius-Calanthe Arnoldiæ*, are sometimes discarded by Orchid-growers, owing to the amount of space they require; but if cut-flowers of an enduring character are required, they are especially useful and effective. At the present time the plants are in full growth, and require liberal waterings; but when they have completed their growth, only sufficient water must be given to keep the soil moist. Do not expose the plants to direct sunshine during active growth, but place them in a shady position in the East Indian-house or plant-stove, where they will receive fresh air daily in mild weather. The pure white *Calanthe veratrifolia* should receive similar treatment; but if any of the plants show signs of deterioration, remove them at once to a shady position in the intermediate-house. *Phaius Humbloti* has recently bloomed, and the young growths have already made some progress; and any re-potting that is required will be done at once, potting them like an ordinary greenhouse plant, with the surface of the soil just below the rim of the pot, the compost being of a firm though porous nature, such as fibrous loam, leaf-soil, and sphagnum-moss in equal parts, with a moderate amount of broken crocks. Give them plenty of root-room, and about 2 or 3 inches deep of crocks for drainage will be sufficient. Lay over these a little rough sphagnum-moss, and do not afford much water until the roots have become active, and are pushing through the compost. The pseudo-bulbs and roots being liable to the attacks of mealy-bug and scale, they should be made perfectly free from these insects before the plants are re-potted. *P. Humbloti* is a difficult plant to cultivate for any length of time together. Experiments have been made at Burford, and the plants cultivated in various temperatures, including the coolest division, also in different positions in each house; but it appears to thrive best when given the same treatment as advised above for the other species of *Phaius*.

Phalenopsis.—Amongst these which bloom at this season, mention may be made of *P. Luddemanniana*, *P. Marie*, *P. speciosa*, *P. violacea*, *P. tetraspis*, and *P. sumatrana*. As several of these varieties continue to bloom for a considerable time, it is well to remove their spikes after a few weeks. If any of the plants require fresh compost or new baskets, they should be attended to at once. All of the *Phalenopsis* named have green foliage, which is very susceptible to injury from the sun; therefore an extra shady position, in addition to the ordinary roof-shading, should be found for them in the hottest division. It is a good plan, where practicable, to place them under the shade of taller-growing plants, *P. Schilleriana*, *P. amabilis*, *P. Aphrodite*, *P. leucorhoda*, *P. casta*, *P. intermedia Portei*, &c., which are growing and rooting freely, should be well supplied with water. Suspend them near to the roof-glass in the East Indian-house, and allow them plenty of light, but shade always from direct sunshine.

The Cool-house.—*Sophronites grandiflora* now commencing to grow, may need to be repotted. This species should be grown in shallow pans, filled to within an inch of the rim with drainage materials, and a small quantity of peat and sphagnum-moss is all that the plants require. The best position during the heat of summer is upon the stage, with such species as *Odontoglossum crispum*. When the flower-buds are seen pushing up, elevate the plant

nearer to the roof, so that it may receive more light. Until re-establishment has taken place, allow each plant to become well dry before it is watered, and when the new growths commence to open at the apex care must be taken that no water be allowed to fall into them. *S. cernua* and *S. violacea* may be grown in the cool and shady part of the intermediate-house, and given plenty of root moisture. Such pretty Orchids as *Oncidium Phalenopsis*, *O. cucullatum*, *O. olivaceum Lawrenceanum*, and *O. nubigenum*, will now require fresh compost to root in, and thrive best in small pots stood upon the stage in the coolest and shadiest position available. A similar temperature is needed for *O. dasytile*, *O. cristatum*, *O. spilopterum*, *O. concolor*, *O. virgulatum*, *O. cheiophorum*, *O. varicosum*, *O. curtum*, *O. Forbesii*, *O. crispum*, *O. Larkinianum*, *O. Mantini*, &c., but these prefer shallow pans, suspended from the roof of the house. All of them should be plentifully supplied with moisture during the growing season. *Ornithidium Sophronites*, a dwarf-growing species, well deserves culture, its small bright scarlet flowers are very pretty and attractive. Suspend it to the roof with *Sophronites cernua*, and treat it exactly the same as that species.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Strawberries.—The ground should be got ready forthwith for the new plantations it is contemplated making. A moist, deep, retentive soil, suits the Strawberry best; but this being not obtainable in every garden, the utmost must be done to make the soil fairly suitable for the plants. As the plant requires much nutriment, plenty of half-decayed farmyard or stable-manure should be incorporated with the staple, as it is not good practice to dig the ground while the plants remain on it; and therefore, whatever is afforded in this way afterwards must be in the nature of a top-dressing. If strong, well-rooted plants be made early in the month of August, a crop of large fruits will be afforded the following season; and the best way to obtain very large fruits is to grow the plants for one crop only, as if kept for another or second year, a greater number of fruits is produced, but they are not so large, and in the third season there is a still greater falling off in size, and in the vigour of the plants; and after the third crop is gathered, the land should be cleared of the plants without delay. The land chosen for the plantation should have been trenched last winter or autumn, and it should now be deeply dug, and all big lumps broken with the spade as the work proceeds, for if large clods are turned in intact, there will be much settling down, which may hinder the growth of the plants. If the plantation is to remain for three years, the rows should be 2 feet apart, and the plants $1\frac{1}{2}$ foot apart in the rows; but if for one year only, the rows for the smaller-growing varieties may be $1\frac{1}{2}$ foot apart, and the plants 1 foot apart. The stronger growers should stand $1\frac{1}{2}$ foot apart each way. The mass of roots and soil must not be broken, but the soil, if in pots, should be well moistened before planting, or if they are lifted from the ground, the latter should be afforded water twenty-four hours previously. Make the soil firm about the roots with a wooden rammer, an operation specially required in dry weather. An occasional application of water may be needed till the plants establish themselves, and attention paid to the removal of runners as soon as they appear. The following are good varieties for general purposes, in their order of ripening; the best are marked with a * :—Laxton's No. 1, *Royal Sovereign, *Vicomtesse Héricart du Thury, *President, *Mentmore, *British Queen, *Dr. Hogg, *Guntton Park, *Richard Gilbert (Carmichael), *Queen of Denmark (Carmichael), *Waterloo, Veitch's Perfection, and Latest-of-All. Strawberries vary in their growth and bearing capacity, according to soil and climate, and fresh varieties should be tested on a small scale the first season. British Queen is a bad grower in some soils, but Dr. Hogg resembles it in many ways, and will succeed in most kinds of soil. [Gardeners should not omit to give a trial to Veitch's Prolific, figured in p. 78. Ed.]

Old Strawberry-beds.—Any of these which are going to be retained should be freed from all runners not required for planting, with the mulching and decaying foliage, but the fresh, healthy leaves should not be removed. All rooted runners should be lifted intact, and only original stools allowed to remain. After the beds are cleaned, the ground should be well stirred with Dutch-hoes, so as to hinder the evaporation of moisture.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to C. H. BERNERS, Esq., Woolverstone Park, Ipswich.

Zonal Pelargoniums.—Plants intended for autumn and winter flowering should be making considerable progress, affording them manure-water, and occasionally soot-water in a clear state, when the plants have filled the flower-pots with roots. Very strong growths may be removed, and employed as cuttings, striking these either outdoors or in a cold frame. Such early-struck plants will bloom in May, June, and July next. Remove all flowers and decaying foliage.

Richardias.—Although *Richardias* may be planted outside, and they are then supposed to require but little attention before lifting them, if robust plants are wished for, it is prudent to assist them, particularly if the weather is very dry and warm, with a few thorough applications of water, and a damping overhead in the evening. If spathes appear on the plants, remove them, also decaying foliage.

Kalosanthes or Crassulas.—At the present season the bright-flowering and fragrant *Kalosanthes coccinea* is one of the most useful plants, and to enhance the brightness of their colour, the flowers should be allowed to open out-of-doors, and the plants then be put under glass. Cuttings may be made from ripe growths about 5 or 6 inches long, taken after flowering is past. The leaves for a space of 1 inch may be removed, and the cuttings inserted, to the number of either five round the side of a 48-pot, or three in a large 60, employing loam and plenty of sand, plunging the pots in a cold frame, and keeping them close and shaded till a sufficient quantity of roots are made, when the pots may be stood on a shelf in a greenhouse. The plants which have flowered should have the flowering-stems removed in part, and be stood out-of-doors till the colour of the rind indicates maturity, when they should be laid on their sides, but the soil not allowed to become dust-dry, or the foliage on the lower part of the stems will die off, giving the plants a naked appearance next year.

Campanula pyramidalis.—Seedlings which may have been pricked into pans, will be large enough to transfer into 4 or 5-inch pots, and a fairly rich soil. When potted and afforded water, place them out-of-doors on a floor of coal-ashes. The smaller plants may be planted outdoors, at 1 foot apart, for lifting and potting in the spring, and making a succession of flowering-plants to those grown in pots.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Stratfieldsaye, Hants.

Out-of-doors Tomatos.—As in this country the fruits on Tomato plants should be as completely exposed to the sun as possible, the lateral shoots of the plants should be removed whilst still quite small, and the leaves themselves reduced in size if they are not cut off. When the plants have set the desired number of fruits, pinch out the leading point and suppress every lateral. The Tomato plant requires abundance of water at the root in dry weather, and the fruits being subject to cracking if the affording of water has been overlooked, and then heavy rains fall, or a great quantity of water is afforded. Moreover dryness causes the blooms to fall without setting.

Late Peas.—The later sowings of Peas will be benefited by frequent applications of water, and by giving a mulching on both sides of the rows. Place more sticks to the late Peas than early ones, it will shade them a little from strong sunshine, as well as enable the bine to stand against autumnal gales.

Laying down Spring-sown Onions.—Should the plants appear exhausted, afford the land weak liquid-manure and clean the bed of weeds, then lay the tops down, doing this by hand, just bending the stems above bulbs and no more. Time may be saved if the quantity is large by pressing down the tops with the back of a hay-rake. It is a benefit to the plants, as growth is checked, and the bulbs rapidly increase in size.

Cauliflowers.—Afford water abundantly to plantations in order to avoid a check to the plants, mould-up finally the stems of plants that have reached 15 inches in height. Clubbed plants should be carefully drawn up and burned forthwith. Do not omit to break down a few of the inner leaves over such as show the curd, so as to preserve their whiteness, or to out them whilst still in fine condition.

Rhubarb.—The present is a suitable time to take stalks for preserving purposes; also to determine

which of the stools are going to be forced this year. Remove as many stalks as will not cause too great a check, leaving a sufficient number to enable the crowns to perfect themselves; and afford plenty of water at the root, but no liquid-manure at this season, as the aim should be early maturity of the crowns of such as will be forced.

Seakale.—Keep the plantations free from weeds, remove flower-heads, and afford weak liquid-manure copiously once or twice. The plant responds quickly to liberal treatment, and especially in warm, dry weather.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

The Carnation and Picotee.—Continuing my remarks in last week's calendar, I enumerate a few varieties which are acquisitions as bed or border flowers: Bendigo, flowers well formed, held erect on stout footstalks, colour bluish-purple, the habit good, and growth vigorous; Cowslip is a yellow ground Picotee, edge bright rose, with a good calyx and strong growth; Duke of Orleans, a deep shade of yellow, large flowers and a good grower; Eldorado, bright yellow flowers edged and marked with bright red, large flowers, habit vigorous, the best of its colours, Golden Eagle, a bright golden yellow flower, marked bright red, good form, and large; Marigold, bright orange, shaded with apricot, marbled carmine, the plant is a good grower, and a continuous bloomer; Miss Audrey Campbell, yellow, large flowers, and an abundant bloomer. Miss Ellen Terry, probably the largest of the white Carnations, the white very clear, and the plant a good doer; Nabob, flowers orange-buff, not very large, a good calyx, excellent habit, and a very free bloomer; Mrs. Gordon, a clear yellow flower, margined with pale rose—a well-formed flower, very distinct, a robust grower, and free; President Carnot, a large yellow-ground fancy, heavily edged with scarlet; Chameleon, fancy, with heliotrope-coloured ground, flaked with pink—a taking flower of a singular colour; Duchess of Portland, white fancy, pencilled and edged with pink—a large flower, fragrant, and a free bloomer; Edith Ladenham, white, of a large size, and very pretty veining; Greit, pale apricot, with blue markings—a novel and fascinating colour, of good habit, an abundant bloomer, and vigorous; Maid Marian, pale pink flowers, which change to white as it ages—flowers of middle size; Mrs. R. E. Clark, an immense large flower with fringed petals, deliciously scented; Paradox, bright scarlet flowers of good habit, will eventually supersede many of the old varieties of its colour; Sweetheart, flowers of apricot yellow, a fancy, flaked and edged with carmine, a large flower with a calyx which does not burst—an effective variety. There are many others of recent introduction, which are as good as some of these I have named, but which I have not as yet tested out-of-doors.

Bedding Plants.—The great heat and drying winds have dried up the surface moisture, and rendered heavy applications of water very necessary in south country gardens, and fortunate is the gardener who possesses a sufficient water supply. If the water fails or is short do not afford dribbles, as doing so does more harm than good, but let them take their chance, and keep the surface of the beds not covered with foliage frequently stirred, so as to prevent the evaporation of moisture; the roots will descend, attracted by the dampness in the subsoil, and they will then find enough to prevent flagging. If Cannas are grown, water should, if possible, be found for them, and a mulch of short-dung or half-rotted tree-leaves, two inches thick, laid over the roots. The same advice holds good of Tobaccos, Wigandias, Solanums, and other large-leaved subtropicals.

Carpet-bedding Plants must be frequently regulated, and the points of the shoots nipped out, and the patterns kept sharply defined.

Dahlias, which are now beginning to show flowers, benefit from frequent applications of weak liquid-manure, making a broad, shallow, basin-like depression round each. All weak and superfluous shoots should be removed, and plants rigidly kept to one stem. Gladiolus should also be afforded liquid-manure occasionally, and the soil about the plants stirred frequently. Fasten the stems of Lilium auratum to stout neat stakes, and apply liquid-manure. If water can be spared for the herbaceous perennial border, the plants will remain in good bloom for a longer period than would otherwise be the case. This border will require considerable attention in the removal of seed-vessels, spent flowers, and in making

the plants secure against the wind. If Wallflower, Myosotis, and Silene pendula seeds be not sown, no time should be lost in getting it done. Sow broadcast on a well-prepared piece of land, covering the seeds with fine soil, and keep it moist.

THE APIARY.

By EXPERT.

(Continued from p. 49.)

Now if the harvest is Basswood, commencing to bloom, say, July 7, the egg for our labourers should be laid on or before June 1. But how shall we secure the laying of the eggs just when we want them? There are several ways of doing it, such as feeding the bees with thin sweets when you wish the queen to lay more prolifically, giving young bees from other colonies that will feed the queen with a larger amount of egg-producing food, &c., but I will here speak only of the plan that has proved most successful in my hands, with the least drawback of any I have ever used. About May 10 to 20, according to the weather (if warm or an early season, the 10th; if cool, or a late season, then the 20th), I commence to do what is known as "spreading the brood," which is simply reversing the brood-nest at this time, putting the combs having the least brood in them from the outside to the centre, and those having the most brood on the outside. This stimulates the queen to fill these rearing, broodless combs with eggs clear down to the bottom and out at the sides, laying twice the eggs she had been during the days just past. In a week or so the combs of eggs and larvae are spread apart, and a frame of comb having honey in it set between them. The removing this honey causes great activity; the queen is fed abundantly, and the comb is filled with eggs in a "twinkling." If the colony is strong in bees, and we have the combs of honey on hand, two combs can be set in at this time. In a few days more the brood is reversed again, soon after which the brood is likely to fill every comb except the two outside ones, and these will soon be admitted into the brood circle. This plan of manipulation causes the queen to fill the cells much more quickly with eggs than she would otherwise have done, and thus many valuable bees are gained, so that there will be a multitude of labourers at the right time; and, as I have often proved (by manipulating one row of lives in the yard, leaving another row untouched), nearly twice as many as there would have been had the bees been allowed to take their own course. In this way the best possible results in honey are secured, and I would advise any beginner to familiarise himself with this method.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Cucumbers for Frames.—Young Cucumber plants, raised from seeds sown about a month ago, as previously advised, may now be planted upon small mounds of light, rich soil, consisting of three parts light loam and one part old Mushroom-bed manure. As soon as planed, place a stick to each of the plants, and secure them from accidental injury. They will need to be soaked at the root with tepid water, and should be shaded for a few days from bright sun. These plants will bear fruits in succession to those in yield at the present time. To furnish plants for winter fruiting, seeds should be sown or cuttings struck at once. Select those varieties that are known to be free-bearing, and good winter fruiters, such as Rollisson's Telegraph. If any plants have been bearing throughout the season, and are required to do so further, it will be well to give them another top dressing, of about 2 inches deep, using the same compost as before. Examine them frequently, and remove some of the old bine and leaves, and stop the young shoots after the third pair of leaves to prevent over-crowding. Continue to afford copious supplies of water at the root as frequently as may be necessary. Syringe the plants several times each day, and close the house early in the afternoon, thus making the best use of the sun heat, and rendering less fire heat sufficient.

Melons.—Plants now in flower will need to be gone over each day at noon, with a view to impregnation of the blooms. Maintain a rather dry atmosphere, and an appreciable degree of warmth in the hot-water pipes in dull weather. The roots should be kept on the dry side for the time being, but not sufficiently so as to cause the plants to suffer. A warm growing atmosphere is essential to plants with fruits now swelling, and a liberal syring-

ing at closing time may be given upon fine days. Should the weather be dull, it will be sufficient to damp the surface of the bed, and the floor of the house. Stop the lateral growths frequently, and afford root-waterings before the soil has become too dry. Syringing should cease when the fruit has commenced to colour, and at the same time less moisture will be sufficient. Fruiting-plants in frames, provided the soil rests upon hot beds, do not require so much water. The surface soil may be permitted to become quite dry before water is afforded, and the last time should be a few days before the fruits will show colour. Success in Melon-culture in frames depends much on the making the most of sun-heat, by closing early in the afternoon, at the same time damping the foliage and the side of the frames by means of a syringe; two o'clock being not too early, on the brightest of days. Should black Aphis appear, fumigate with Richards' XL-All.

Tomatos for Winter Use.—The plants may now be potted into their fruiting-pots, such as 24's or 16's. A compost I have used for several years for Tomatos in pots consists of 6 parts loam, 1 of leaf-mould, and 1 of burned earth, or old mortar-rubble. Use clean pots, and if these are new soak them in water for a few minutes beforehand. Provide a depth of about 2 inches crocks for drainage, and cover this with a thin layer of moss, or the rougher and more fibrous parts of the soil. Pot firmly with a rammer, and see that the soil is moderately moist before use. After potting place a stick to each plant, afford a gentle watering, and for a few days shade the plants from the sun. In order to obtain a sturdy, short-jointed growth, keep them in a light airy situation near to the glass; fire heat being required only at present during dull, damp weather. Maintain a somewhat dry atmosphere, and remove side-shoots as they appear.

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (−) the Mean for the week ending July 23.	ACCUMULATED.				(More +) or less (−) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 2, 1898.	Below 42°, difference from Mean since January 2, 1898.					
0	2 −	76	0	+ 131	− 228	1 −	145	30.5	30	23
1	1 −	97	0	+ 94	− 222	3 −	108	13.1	35	32
2	0 aver	115	0	+ 120	− 216	3 −	99	10.5	31	30
3	0 aver	130	0	+ 42	− 207	4 −	92	10.4	35	33
4	1 +	130	0	+ 31	− 215	2 −	90	9.6	33	33
5	2 +	145	0	+ 83	− 243	4 −	83	10.0	33	34
6	0 aver	108	0	+ 133	− 217	5 −	125	20.0	30	35
7	1 +	125	0	+ 123	− 244	5 −	105	16.9	28	33
8	1 +	134	0	+ 117	− 150	4 −	98	15.3	31	41
9	2 +	120	0	+ 121	− 168	4 −	133	18.1	20	31
10	3 +	139	0	+ 191	− 134	2 −	101	17.3	25	35
*	3 +	153	0	+ 234	− 93	3 −	112	12.4	44	45

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending July 23, is furnished from the Meteorological Office:—

"The weather during this period was somewhat less settled than that of the week immediately preceding it; a good deal of cloud prevailed at times, and rain was occasionally experienced in all parts of the kingdom. Thunderstorms occurred in some parts of Ireland and central England on Friday, the accompanying rainfall being exceptionally heavy in portions of our north 'Midland Counties.'

"The temperature was again slightly above the mean in most districts, but just equalled it in 'England, N.E. and E.' and in 'Scotland, W.' and was a little below it in 'Scotland, N. and E.' The highest of the maxima were recorded either on the 17th or 18th over England, but later in the week in Ireland and Scotland; they ranged from 82° in 'England, S.' and from 76° in 'Ireland, N.' to 73° in 'England, N.W.' and 'Ireland, S.' to 72° in 'Scotland, N.' and to 70° in 'Scotland, W.' The lowest of the minima, which were mostly recorded about the middle of the week, ranged from 33° in 'Scotland, E.' 36° in 'England, N.E.' and 38° in 'Scotland, N.' to 47° in 'England, S.W.' 52° in 'Ireland, S.' and 54° in the 'Channel Islands.'

"The rainfall was less than the mean in all districts. In the south and east of England the fall was very slight, but at York and Bawtry the amounts recorded during the thunderstorm noted above were 1.57 and 2.15 inches respectively.

"The bright sunshine was less than the mean in nearly all districts, but rather above it in 'Scotland, N. and E.' The percentage of the possible duration ranged from 44 in the 'Channel Islands,' and 38 in 'England, S.' to 25 in 'Ireland, S.' and to 2 in 'Ireland, N.'"

MARKETS.

COVENT GARDEN, JULY 23.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	4 0-12 0	Fuchsias, per doz.	6 0-9 0
Aspidistras, p. doz.	12 0-30 0	Foliage plants, per	
— specimen, each	5 0-15 0	dozen ...	12 0-36 0
Calceolarias, per doz.	5 0-7 0	Heliotropes, p. doz.	5 0-7 0
Clematis, per doz.	3 0-4 0	Hydrangeas, various,	
Cissula, per doz.	12 0-24 0	per doz. ...	10 0-18 0
Dryas, each ...	1 0-7 6	Liliums, various,	
— various, p. doz.	12 0-24 0	per dozen ...	12 0 3 0
Ericas, various, per		Marguerites, p. doz.	6 0-12 0
dozen ...	12 0 30 0	Mignonette, p. doz.	4 0-6 0
Evergreen shrubs,		Palms, various, ea.	2 0-10 0
in variety, p. doz.	6 0-24 0	— specimens, ea.	10 6-84 0
Ferns, small, per		Pelargoniums, doz.	12 0-18 0
dozen ...	1 0-2 0	Rhodanthes, p. doz.	4 0-6 0
— various, p. doz.	5 0-12 0	Scarlets, per doz.	3 0-6 0
Ficus elastica, each	1 0-7 6	Spiraeas, per dozen	6 0-9 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apricots, box, doz.	0 7-0 8	Gooseberries, per	
— baskets ...	2 6-3 0	sieve ...	1 6-1 9
— ½-bushel ...	8 0 —	— ripe yellow, per	
— cases ...	4 0-4 6	sieve ...	3 0-3 6
Bananas, bunch ...	8 0-10 6	— red, per sieve ...	3 0-8 6
Cherries, English,		Melons, each ...	1 (-2)
May Duke, per		Nectarines, doz.	6 0-12 0
sieve ...	6 0-9 0	— second quality	2 0-6 0
— white ...	4 0-6 6	Peaches, per doz.	
— black ...	7 0-8 0	(according to	
— Florence ...	6 0-10 0	size) ...	6 0-12 0
Currants, black,		— Second quality	2 0-6 0
per sieve ...	6 0-8 6	— foreign, in box	
— red ...	4 0-5 0	of 12 ...	1 2-1 4
Figs, per dozen ...	1 0-2 0	Pines, each, from ...	4 0-8 0
Grapes, English,		Raspberries, doz.	
Hamburg, lb.	1 6 —	punnets ...	4 0-5 0
— Belgian, per lb.	0 7-0 9	— tubs, cwt.	88 0 4 0
— Channel Isles,		Strawberries, Kent,	
per lb. ...	1 0 —	pecks ...	2 0-3 0
— Muscats, per lb.	3 0-5 0	— gallons ...	1 0 —
Greengages, foreign,		— punnets, dozen	8 0-6 0
baskets ...	5 8-6 3		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Onions, green, per	
per doz.	0 9-1 6	doz. bun.	2 0-4 0
Beans, English		— Valencia and	
(Dwarf), lb.	0 6 0 8	Oporto, cases ...	5 6 —
— Channel Islands,		— Portugal ...	7 0 —
per lb. ...	0 6 —	Parsley, per dozen	
— sieves ...	4 6-5 0	bunches ...	4 0 —
— French, flats ...	4 6 5 0	Peas, bags ...	4 0-5 0
— Broad, bushel ...	1 0-1 6	— Blues, Harri-	
Beetroots, new, per		son's Glory, per	
dozen ...	1 0 —	bushel ...	2 6-3 0
— p. tally of 60 ...	4 0-5 0	Potatoes, Channel	
Cabbage, open, doz.	0 6 —	Isles, Kidneys,	
— open, p. tally ...	2 6-3 0	cwt. ...	3 0-3 6
Cauliflowers, Eng-		— Puritans, the	
lish, per dozen	2 0-3 0	best Kent, per	
Cress, doz. punnets	1 0 —	bushel ...	2 6-3 0
Carrots, New, bun-		— Ashleaf ...	4 0-4 6
ches, pe. dozen	1 6-3 0	— Kent Kidneys,	
Celery, new, bundle	1 6 —	per bushel ...	5 0 —
Cucumbers, p. doz.	2 0-3 0	— Beauties, p. r	
Endive, new, per		cwt. ...	4 6-5 0
dozen ...	1 6-2 0	Radishes, Round,	
Garlic, new, per lb.	0 4 —	breakfast, per	
Horseradish, foreign		dozen bunches	
per bundle ...	2 0-2 6	(home grown) ...	1 3 —
Leeks, new, dozen		Salad, small, pun-	
bunches ...	2 0 —	nets, per dozen	
Lettuce, Cabbage,		Shallots, new bun-	
home - grown,		ches, per dozen ...	2 0 —
per doz. ...	0 9-1 0	Spinach, ½-bushel ...	2 6 —
— Paris Cos, home-		Tomatoes, English,	
grown, per score	2 6 —	per lb. ...	0 4-0 5
Marrows, Vege-		— Channel Isles,	
table, per dozen	2 0-3 0	per lb. ...	0 3½-0 4
Mint, per dozen		Turnips, new Eng.	
bunches ...	2 0-8 0	per dozen ...	8 0-4 0
Mushrooms, per lb.	1 0-1 3	Watercress, p. doz.	
Onions, Egypt., bags	5 6 —	bunches ...	0 4-0 8

POTATOES.

Home grown, Kent and Bedfordshire, 70s. to 100s.; Jersey and French, 70s. to 90s. per ton. John Bath, 32 and 34, Wellington Street, Covent Garden.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms	8 0-4 0	Orchids:—	
Carnations, pr. doz		Cattleya, 12 bms.	5 0-8 0
blooms ...	1 0-3 0	Odontoglossum	
Eucharis, per dozen	2 0-4 0	crispum, 12 bms.	2 0-4 0
Gardenias, per doz.		Pelargoniums, scar-	
blooms ...	1 6 3 0	let, per 12 bun.	3 0-5 0
Gladioli, white, doz.		— per 12 sprays ...	0 4-0 6
sprays ...	0 8-1 0	Roses, Tea, p. doz.	0 6-1 0
Lilium Harris, per		— yellow (Pearls),	
doz-n blooms ...	2 0-4 0	per dozen ...	1 0-2 0
Lily of the Valley,		— pink, per dozen	2 0-4 0
dozen sprays ...	0 6-1 0	— Safrano, p. doz.	1 0-2 0
Maidenhair Fern,		— red, per dozen	0 6-1 0
per 12 bunches ...	4 0-8 0	Stephanotis, doz.	
Mignonette, per 12		sprays ...	1 0-1 6
bunches ...	2 0-4 0	Tuberose, 12 blms.	1 0-1 6

ORCHID-BLOOM IN VARIETY.

(Remainder of Markets carried forward to p. vii.)

NOTICES TO CORRESPONDENTS.

A BRAN FROM QUEENSLAND: *J. D.* The information afforded is insufficient.

APPLE DISEASED: *S. W. P.* The "blight," really a minute species of fungus, should be got rid of by syringing the trees with Bordeaux Mixture. The fruit should not be used till rain has fallen in abundance to wash the fruits. Recipes for making the mixture have been often given in these pages.

BOOKS: *A Young Subscriber.* *The Tomato: its Culture and Uses*, by W. Iggulden, published at 12, Mitre Court Chambers, Fleet Street, E.C. Price 1s. — *V. P.* *Handbook of Hardy Trees and Shrubs and Herbaceous Plants*, by Decaisne, Naudin & Hemley, published by Longmans & Co.

CATLEYA GASKELLIANA VAR. ALBA: *J. R.* We have failed to run the notice of the plant down; can you not give a nearer reference?

CYPRIPEDIUM SPECTABILE: *Veritas.* The plant is hardy. It should be planted in bog-earth or peat, in a naturally moist spot in the garden.

GRAPES: *Beginner.* The berries are "shanked" and split, and decay has set in. Nothing you can now do will save the crop. There must be something much amiss with the border, or the Vines are suffering from previous over-cropping, and doubtless from mistakes also in the management this season. Examine the border, and if the soil is found to be in a pasty, close, wet state, and few healthy roots found therein, you may conclude that only radical measures will be of any avail. When you examine the border, send us a fair sample of the soil and roots, and some foliage and shoots, and we will advise you further. Purchase some work on the cultivation of the Vine, as Mr. A. F. Barron's *Vines and Vine Culture*, published at *Journal of Horticulture* Office, 12, Mitre Court Chambers, Fleet Street, and study it attentively.

GREEN-FLY IN ODONTOGLOSSUM-HOUSE: *Perplexed.* Vaporise with Richards' XL-All. It will not hurt the plants or blooms if you follow the directions sent with the stuff.

HOLLYHOCK LEAVES DISFIGURED: *A., Nottingham.* The rustiness is due to evaporation of moisture from the surface of the leaves. There is no trace of fungous or insect pest at present.

LAWN TENNIS MANUAL: *H. White.* We do not supply the manual; apply to Mr. Upcott Gill, 171, Strand, W.C.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.* — *A. J. L.* Iris Golden-stactiana. *J. G. Baker.* — *W. Young.* 1, Lelia crispa; 2 and 3, varieties of Coleus, which we cannot name (consult some nurseryman who grows them); 4, Campanula isophylla, white variety; 5, Campanula isophylla, quite impossible to name the Carnation. — *H. R. G.* 1, an immature form of Pteris aquilina; 2, Polypodium vulgare; 3, Hieracium sabaudum; 4, Serratula tinctoria; 5, Lotus corniculatus; 6, Alisma Plantago; 7, Hypericum pulchrum. — *C. B.* 1, Hedy-sarum coronarium; 2, Ligustrum lucidum; 3, Lychnis chalcidica; 4, Centaurea rubra; 5, Achillea Millefolium, rose-coloured variety; 6, Jasminum floribundum. — *S. W. P.* Hypericum Andromedum. — *Rosa.* 1, Arrhenatherum avenaceum; 2, Eragrostis superba; 3, Eragrostis filiformis. — *J. May.* Bromus secalinus var. velutinus. — *C. A. B.* 1, Campanula urticifolia; 2, Campanula urticifolia alba; 3, Borago officinalis; 4, Hieracium aurantiacum; 5, Dipsacus glutinosus; 6, Daphne Mezereum. — *J. R. P.* 1, Veronica Andersoni variegata; 2, Choisya ternata; 3, Acer Schwedleri; 4, Acer platanoides. — *J. C.* Ornithogalum arabicum. — *E. S. R.* 1, (E)nothera Youngi; 2, Salvia

bicolor; 3, Iris foetidissima; 4, Galium verum; 5, Eugenia myrtifolia; 6, Fuchsia corymbiflora.

NARCISSUS: *C. H. W.* Two single flowered—Grand Monarch, white, with yellow cup, and Her Majesty, pure white. These are Polyanthus varieties. Two double-flowered—Early double Roman, white, and N. odoratus minor plenus, golden-yellow.

PEACHES: *C. H.* The splitting of Peaches is generally caused by excessive watering after a period of drought.

POLLARDING TREES: *G. R. M.* The following species may be pollarded:—Carpinus in variety Hornbeam, Acer (of Japanese species we have no experience), and the more effective are pennsylvanicum, platanoides in variety, rubrum, tartaricum, colchicum rubrum and fraxinifolium (Negundo and N. variegatum), Aesculus, Horse-Chestnut, but it does not live to a great age if pollarded; Celtis, Fraxinus excelsior, Morus (Mulberry), Quercus of all species, Salix, Tilia, all species. Pollarding is best done at the fall of the leaf, and whilst the trees are under twenty years old, although there is scarcely any limit to age. However, in young trees decapitation leaves a comparatively small wound to heal over, which is not the case in large trees.

QUITTING SERVICE: *C. H. W.* The agreement being for twelve months, the labourer leaving before the expiration of the year, forfeits his bonus of £2. You cannot force him to stay if he desires to leave the service, unless you take action, and we doubt if you would be successful.

ROSES FOR GREENHOUSE WALLS: *A. J. L.* You might add W. Allan Richardson and Catherine Mermet, or the climbing Devonensis.

SHADING FOR GLASSHOUSE: *Perplexed.* Coat with sour milk; to make it more opaque, you may add a little whiting.

SPRAYING TOMATO-PLANTS WITH SULPHIDE OF POTASSIUM AND WATER: *Tollesbury.* At any time after the crop of fruit is set, choosing a dull but not wet day, and preferably in the evening.

STAKE FOR SECURING CARNATION STEMS: *Captain Walker.* Most florists and horticultural sundries-men keep them for sale.

STRAWBERRIES BITTEN OFF AND LAID IN HEAPS: *J. S.* The mice are the delinquents, and you should clear them off, if possible, early in the year. But they do not always perform such pranks.

TOMATOES, &c.: *'Bus.* It is quite easy to grow Tomato in flower-pots, and no doubt that you can do so successfully in the glasshouse hitherto made use of; but why not incorporate a good quantity of fresh loam, lime-rubbish, and charred soil, removing as much of the old staple, and continue to plant-out? It gives better returns, and is less costly in every way. You might make a beginning with the cultivation of Cucumbers, Melons, Grapes, Strawberries, which if got into the market early, secure remunerative prices. The following kinds of flowers pay to grow, viz.:—Eucharis in variety, Roses, bleached Lilac, Odontoglossum crispum, Cattleya labiata, and other species of Orchids, Ferns, Smilax, Primulas, Stephanotis, &c.; Bouvardias, zonal Pelargoniums, and many more, as cut-blooms and as plants, mostly the former.—*J. P. A.* The "sleepy disease," concerning which so much has been said in the *Gardeners' Chronicle*. There is no cure. Burn the plants.

TOMATOES GOING OFF: *J. Smith.* Insufficient material. Can you not send leaves and portion of stem. The roots were not affected by eel-worms; and the disease may be induced by excess of moisture in the air, and at the root. The plant is a native of a country which has a meagre rainfall.

VINES: *R. K.* The leaves are suffering from the so-called "browning" disease. Cut off the worst and burn, and dress the foliage with sulphide of potassium, ½ oz. to the gallon of warm rain-water.

WORTHING RATING CASE: *J. H.* There have been cases recently decided, in a sense opposed to the judge's decision, arrived at on the occasion of this test case being carried to the Court of Appeal, as reported in our columns, p. 676, vol. i., 1887.

COMMUNICATIONS RECEIVED.—*C. T. D.*—*A. M. M.*—Garton, Junior.—*F. Fairbairn* and *W. B. Upjohn*, received too late for insertion.—*P. E.*—*W. S.*, Ghent.—*M. Cogniaux*, Verviers.—*M. Heron*.—*E. W.*—*R. C. B.*—*J. Plummer*, Sydney.—*A. D.*—*G. H.*—*G. B. M.*—*W. S.*—*Wild Rose*.—*H. R.*—*C. Sharpe* & Co. Ltd.—*E. C.*—*Merryweather & Sons*, Ltd.—*A. R.*—*A. H.*—*D. T. F.* (we cannot give the prize-list now).—*H. M.*—*W. T. Toogood*.—*C. T. D.*—*G. M.*—*A. Butcher*.—*Miss J. K. T.*—An Old Reader.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*A. Cogniaux*, Verviers.—*E. Scaplehorn*.—*W. Swan*.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 6, 1898.

THE CHRONICLE OF A LITTLE CORNISH GARDEN.

JULY.—The month of Carnations has, perhaps, more flowers to give us than any other month in the year, yet the garden has passed its time of greatest interest. When the hedges had little but earth and grass and leafless twigs to show us, our Crocuses and Snowdrops had a value beyond estimation. Steadily, month by month, the garden display has been continuously increasing in splendour and amplitude. After the first glory of the Roses has waned, however, a general feeling of the "beginning of the end" seems to dawn on the garden. At the end of June the real feature of the pageant—the royal carriage of the procession—seems to pass before our eyes, and though equal or greater beauty or splendour may be yet to follow, our enthusiasm can but be on the ebb. Moreover, we are not so dependent on our gardens for beautiful flowers now that we may find flowers everywhere—hedges fragrant with the "söote Wodëbynde," towans purple with "bees-alluring Thime," and yellowing corn-fields blotched with scarlet. The weather, also, is far too hot and oppressive for enthusiasm, and we feel that the shade of trees, "a flask of wine, a book of verse," and a fellow idler, are more according to the month's temperament than active gardening.

Now, more than ever, is it obvious that "a garden without trees scarcely deserves to be called a garden." Shade at any price is wanted, and I note with gladness the progress my trees are making. These are, with the exception of a Chestnut, all fruit trees; and I know of few more beautiful sights than a Crab or Pippin in bloom or fruit. If I can find room in the autumn, I mean to plant a Medlar and a Mulberry-tree. Of the former, Canon Ellacombe says:—"I never saw a Medlar that was not of a beautiful shape, and it makes a more natural tent or arbour than any other tree." That surely describes a "real want" in July.

Though shade is so important to our pleasure, we must try to maintain some open ground, and this is essential if we would grow "the fairest flowers of the season." In many ways, the most beautiful of all garden flowers, full of associations, yielding sweetest scent of "summer spice," and of lovely and definite colours, the Carnations has long been a universal favourite. It is to be counted to our good fortune that those florists—professional and amateur—who are now working hardest at the production of new varieties of Carnations, are doing their utmost to give us kinds for the decoration of the garden, as well as specimens to figure on the show-benches. The habit of the plant is receiving attention equally with the character of the blooms. A really successful bed of Carnations must contain no weak growers, or half the beauty of the bed will be gone; abundant foliage should cover the

ground allowed between the plants. It must contain only plants which carry their flowers erect, or it will give us merely a picture of a bundle of sticks and raffia (of course, an occasional stake is generally required, in which case it should be as little obvious as may be); there must be no habitual pod-bursters—although nearly every kind occasionally bursts its calyx—and, as far as possible, the kinds chosen should be free-bloomers.

Just at present, self-coloured kinds are receiving special attention, and they are, on the whole, the most valuable in the garden; but I would by no means grow only selfs. Varieties of every class—fancies, flakes, bizarres, and Picotees—succeed in the open air, and many are very beautiful. Even yellow-grounds do well in the open in many gardens, and these are perhaps the most attractive of all. Among the most beautiful yellow-ground Carnations are Cardinal Wolsey, The Czar, The Dey, Czarina, George Cruickshank, and Brodrick; whilst Mrs. Douglas, Voltaire, Florrie Henwood, and Golden Eagle, may be taken to represent the best yellow-ground Picotees. Yellow Carnations are mentioned by both Gerard and Parkinson, and have had periodic attacks of popularity since their times. One point to bear in mind is, that they usually bloom a little later than the other classes.

I have already commenced layering, and have taken and planted some cuttings. The latter seems to be the common method of propagation adopted in America, but it is said to produce plants which bloom rather later than those from layers. This fact, if it be a fact, should be useful in obtaining a longer period of Carnation-flowering than is usual. I have collected a substantial pile of material for a bed which I mean to make for next year. Carnations cannot bear fresh manure, and as there is some difficulty in obtaining any quantity of top-spit, I have got together a few loads of road-scrappings, old hot-bed manure, and a little leaf-mould, and mean to thoroughly incorporate these with the soil to a good depth, moderately deep planting being an important point. I want to have my bed ready and planted not later than the beginning of October, and have been deciding on the kinds I shall grow. I have made up my mind to have the bed a mixed one, and the following selection will give an idea of my list so far as I have constructed it:—Mephisto (deep crimson self), Sadek (rich rose), Miss Audrey Campbell (large primrose self), Mrs. Eric Hambro (a perfectly formed white self), Mrs. Colby Sharpin (cinnamon), The Czar (yellow ground, margined purple), George Cruickshank (orange ground, flaked crimson), Cardinal Wolsey (yellow ground, flaked red), Stadtrath Bail (yellow ground, edged scarlet), Master Fred (crimson bizarre), James Douglas (purple flake), Robert Lord (scarlet bizarre), Sportsman (scarlet flake), Mrs. Rowan (rose flake), and the yellow ground Picotees above-named.

Of course, as it grows in the wild state, the Carnation does not frequent "made" beds or pots of earthenware. High up on limestone rocks, in the crevices of old castle-walls—as at Rochester, Les Andelys, and the Château Gaillard—and in like places, often apparently devoid of "soil," the *Dianthus Caryophyllus* lives perpetually—requiring no stakes, but hanging its rosy flowers "downwards" in masses visible to all. The natural habit of the Carnation should teach much to those of us who grow plants as plants, and not as show monstrosities. I mentioned last month that I proposed to plant some clumps of Daffodils among my Carnations, but I am now in doubt as to the wisdom of this course, seeing that the Carnation-bed will require a thorough re-making and re-planting every autumn, whereas the Daffodils benefit by being left alone. I now feel inclined to plant clumps of Crocuses, and early and late Tulips instead.

The summer Roses are nearly over, but the Teas are glorious. Every one of my young bushes has numerous expanded blooms or buds, but of them all I think the most beautiful is a Rose which I cannot find even mentioned in the catalogues. I bought it

two years ago in a cheap lot of "half-a-dozen Roses for half-a-crown," and to-day I counted thirty-eight blooms on the little plant. The Rose to which I refer is Marie d'Orleans, which was raised fourteen years ago by M.M. Nabonnand, of Golfe-Juan. Their catalogue description of it runs: "Flowers bright rose, very large and full; the habit of the bush very vigorous; an abundant and beautiful bloomer." The colour, however, is much more than this description implies—being a beautifully bronzed red, which has not the slightest tendency to become wasty as the bloom expands. The foliage (which is dark green), the reddish spines, the long buds, and the open flowers, are all beautiful, so that it seems to be one of the perfect Roses. If I am correct, why is its name absent from so many English catalogues?

Another Rose (a hybrid Tea), which has been very satisfactory, is Marquise de Salisbury (introduced ten years ago by Léveque), a profuse bearer of most fragrant semi-double velvety-crimson Roses of rather small size. This, again, is a Rose, beautiful both in the bud and fully open condition—an important and valuable characteristic when one reflects how many Rose-bushes with numerous buds, and partly expanded flowers of great beauty, are disfigured by an equal number of fully-expanded blooms which have neither beauty of form nor colour.

Of all my Roses, however, the most continuous bloomer has been Baronne de Maynard, a hybrid Bourbon of moderate habit. It bears numerous beautiful white Roses, of purest colour and perfect form. Gloire de Dijon has not come up to my expectations: scarcely a bloom has had anything which could be called shape, but of course it is a free-bloomer and is very fragrant, so that one must not grumble too much; but it is so universally recommended as the Rose for all purposes that one's anticipations are likely to fly a little too high. Turner's Crimson Rambler is growing vigorously over an arch, but has not bloomed this (its first) year. Madame Alfred Carrière, Maréchal Niel, Niphetos, William Allen Richardson, Bouquet d'Or and Céline Forestier are a few of the Roses I have found most satisfactory all round. The cherry-coloured Roses (such as Cheshunt Hybrid and Alfred Colomb) are very beautiful when fresh opened, but acquire a dreadful colour in the course of a day or two.

Next to Roses and Carnations, Hollyhocks, Sweet Peas, and Shirley Poppies are now most noteworthy.

"... a garden full of bees,

Large dropping Poppies, and Queen Hollyhocks,"

is a fair description of mine as seen at the first glance. The tall pyramids—rose, pink, white and yellow—rise high above the other plants of the border, for many of the Hollyhocks are more than 9 feet high. So vigorous are they, that I have not staked a single plant as yet, and no sign of "the disease" to which the "holy mallows" are subject has appeared. Seen from a little distance the handsome spires of the yellow Evening Primrose, *Oenothera Lamarckiana*, might easily be mistaken after sunset for great single Hollyhocks. A point with these plants is to remove the withered flowers each day, or a very untidy appearance results. The white *Oenothera taraxicifolia* is also a beautiful flower, opening in the evening, and is especially valuable in July, when strolls round the garden are most enjoyable after the sun has set.

The Sweet Pea hedge has been, and is, perfect. Keats' description strikes me as among the very best flower-picture in poetry:—

"Here are Sweet Peas, on tip-toe for a flight,
With wings of gentle flush o'er delicate white;
And taper fingers catching at all things,
To bind them all about with tiny rings."

Sweet Peas require the constant picking of pods, if the flowering is to be continuous. I have just topped the hedge with the shears, and hope to induce a free new growth from the base, and abundant autumn flowering. The scent of the Sweet Peas is deliciously wafted by the breezes, so that few plants better serve to climb near arbours or garden seats.

The Lavender-spikes and "Cheerful Rosemarie," also, are beautiful and sweet possessions. What a debt we owe to the bees—which debt I have sorrowily increased by stealing some forty-two sections from

my hive already this season—through whose taste we are able to enjoy the fragrance of Thyme and Mint, Balm and Marjoram, Lavender and Rosemary. For all these labiate herbs are chiefly fertilised by bees, and are accordingly modelled to their liking. The curious little covering of hairs which conceals the fruits in the old fertilised flowers of the Marjoram is seen to be held back against the calyx by the corollatube in the flowers just opened. The object of the covering is of course to hide the ripening seeds from graminivorous birds.

These sweet herbs used to have a much more important place in the garden than at present. It is now rare for those responsible for the care of gardens to plant herbs and bushes for their fragrance only; yet the pleasure obtainable is full as much as, though more delicate than, that yielded by beautiful flowers devoid of scent. In Elizabethan gardens, however, fragrance was counted as important as beauty, and Bacon directs the planter to grow numerous flowers and herbs that "doe best perfume the aire," and also "those which perfume the aire most delightfully, not passed by as the rest, but being troden upon and crushed."—"That is Burnet, Wilde-Time, and Water-mint. Therefore, you are to set whole allies of them, to have the pleasure when you walke or tread."

Of all the herbs, Rosemary seems to have been most esteemed, and was, as of course everyone knows, a symbol "for remembrance;" even as early as the fourteenth century it was considered an embodiment of all the virtues:—

"This herbe is callit Rosemaryn,
Of vertu that is gode and fyne;
But alle the vertues tell I ne can,
Ne I trawe no erthely man."

I suppose we shall never take such an extreme view of the benefits of growing Rosemary as that of this writer, still the pleasures to be obtained from Mignonette and Sweet Briar, Sweet Peas, Thyme, Lavender and Rosemary, are so great that one cannot understand how it is that so few plants are grown for their perfumes alone. *Harry Roberts.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM NEBULOSUM PARDINUM.

The blossoms of *Odontoglossum nebulosum* are generally white, spotted with red-brown on the inner halves of all the segments, but occasionally an unspotted form is observed. On the other hand, the variety *O. n. var. pardina* is white, densely spotted with reddish-brown over the greater part of its surface, the large fleshy callus and base of the lip being of a bright yellow, as in all the other forms of the species. A very fine variety of it, densely spotted except the tops of the segments, and having a faint olive-green tint to the basal spots, is sent by H. Cary Batten, Esq., Abbots Leigh, near Bristol.

CATLEYA DOLOSA.

A flower and a clever sketch of a plant which is doubtless of this rare species, which is usually represented in gardens by the better form of *Catleya Walkeriana*, is sent by Messrs. Charlesworth & Co., Heaton, Bradford, who imported the plant as *C. Schroderiana*. The pseudo-bulbs, most of which bear two leaves, are from 3 to 5 inches in length, and slenderer than those of *C. Walkeriana*. The flower measures 4 inches across; the sepals and petals are of a bright deep-rose tint, and the lip has not the distinct separation of the front and the side lobes of *C. Walkeriana*, and in that and other respects it more nearly approaches *C. × O'Brieniana*, is white at the base, and tinged with rose towards the upturned edges of the side lobes. The slightly-connected median area of the lip is of a primrose-yellow tint, and the border of the front lobe a bright rose-purple. The upper surface of the fleshy column is rose-pink, and the whole flower strikes one as belonging to a plant that is probably of hybrid origin, rather than a distinct species.

CATLEYA WARSCEWICZII VAR. SATURATA.

This handsome variety has a lip of a rich amethyst-purple tint, with the patches of a cream-white colour,

usually seen on the sides of the lip in the typical *C. Warscewiczii* suppressed. In the variety *Rothschildiana* the base and sides of the lip are traversed by reddish-purple lines, and in a very handsome form, which D. B. Rappart, Esq., Mere Bank Promenade, Liscard, has sent for inspection, the colour is brighter than in the original, which flowered with Messrs. Backhouse & Sons, of York, in 1892. This form likewise possesses the reddish lines observed in *C. W. Rothschildiana*, and on each side of the lip there appears a very small spot, clearly defined, and of a primrose colour, that heightens the dark and other tints of the rest of the flower. *J. O'B.*

SHORT NOTES ON BULBOUS PLANTS.

BESSERA ELEGANS.—A pretty little bulbous plant, not usually seen. It has a Rush-like leaf, 1 to 2 feet long, and from four to six pedicellate drooping flowers, borne on a long slender stem, 2 feet long. The segments are vermilion in colour, three-quarters of an inch long. The projecting filaments and style are purple, and the anthers contain iridescent green pollen. It would make a fine addition to the conservatory, on account of its light, airy, and graceful contour, and a combination of colours rarely seen. The bulbs should be kept moderately dry in the winter.

Herbertia pulchella.—An extremely pretty and somewhat rare Irid, of small growth, from South America. It has a branched stem a foot long, and produces from eight to twelve flowers, from 2 to 3 inches broad, of a deep satiny-blue, the outer segments having a narrow white band from the middle to the base; one to three flowers are open at a time, which only last for a single day. From four to six bulbs should be put into a 5-inch pot, plunging outside during the summer, and storing in the Cape-house when the foliage dies down, and keeping it dry till the spring.

Cypella plumbea.—A remarkable Irid, of singular lead colour, with the base of the segments mottled yellow on a brown ground. The inner segments have a blotch of blue on either side; best grown in pots, keeping dry in winter, and storing in Cape-house.

Zephyranthes (Hippeastrum) brachyandrum.—As a pot plant for the conservatory in June or for summer plunging in the rock-garden, this species cannot fail to attract attention. The flowers are solitary, and are borne on a spathe about 1 foot high. The colour varies somewhat from a light blush to rose; a fully-expanded flower measures from 2 to 2½ inches across, and remains in perfection three or four days. I usually grow them six to eight in a 5-inch pot, in a compost of loam, with about one-tenth of its bulk of basic slag graded to about the size of Peas. This keeps the soil sweet for several years, and affords just sufficient stimulant for these small bulbs. It produces seeds readily, which should be sown as soon as gathered, germinating in a temperature of 60°, removing the seedlings to the Cape-house when well advanced; seedlings with me flower under two years. The bulbs are somewhat prolific in offsets, so that they can be increased readily by this means also. Dry off the flowering bulbs in the winter, and store in the Cape-house.

Z. candida.—A very pretty white-flowered species, of a somewhat cupped form, like a *Crocus*. It flowers in June and July; the spathe is 1 foot high, and the leaves are dark glabrous green, somewhat thick for a *Zephyranthes*, and nearly cylindrical, and measure 1½ foot long. It is more robust than *Z. brachyandra*, and I find 4 to 5 bulbs to a 5-inch pot sufficient. Like the preceding species, it should be dried off in the winter.

Z. gracilifolia bears a pretty flower, somewhat smaller than the two preceding species, of a rich rose-pink colour; it measures about an inch across. The leaves, 1½ foot long, terete and slender, dry off in winter. This species will be found quite hardy if

planted under an overhanging boulder in the rock-garden, where it would be kept in a fairly dry state in the winter.

Z. carinata resembles *Z. brachyandra*, and possesses a deep rose-coloured band on the inside of each segment. It is a somewhat difficult subject, the bulbs becoming smaller from no apparent cause. Some fine flowers of this species were produced in the succulent-house at Kew a few weeks back from plants in a border alongside of the walk, where I should think the soil would be somewhat moist; the fact seems to point out that it does not want so much "toasting" as is usually given it.

Z. rosea.—The small species usually seen has flowers not more than 4 inches high, deep rose in colour, about 1 to 1½ inch across. It is useful for a small border in the greenhouse, or for cultivation in flower-pots. *Geo. B. Mallett.*

(To be continued.)

VICTORIA PARK, TIPTON.

(SEE FIG. 25, P. 99.)

A NEW public park of 33 acres extent is about to be laid out at Tipton, Staffordshire. A competition has just taken place for prizes offered for the best adjudged plans for laying-out the area, and the first prize, of £25, has been awarded to Messrs. W. Barron & Son, of the Elvaston Nurseries. Mr. J. Perry, an architect of Tipton, was 2nd; and there were eight others. Messrs. Barron's plan provides for a lake of about 3 acres, also cricket-stand, recreation-grounds, bowling-green, band-stand, shelters, &c. They also furnished plans for lodge, entrance-gates, &c. Unfortunately, the colliery district of Tipton is by no means a favourable one for gardening, and considerable care, we suspect, will be necessary in the selection of trees and shrubs for planting.

SEED TRADE.

PEAS AT MESSRS. HURST & SONS.—I have recently enjoyed the advantage of looking through some 700 growing samples of Peas at Messrs. Hurst & Sons' seed-trial grounds at Kelvedon, in Essex. A more reliable trial can scarcely be imagined, because the soil, like that of the greater part of the Kelvedon district, is well fitted for the growth of vegetable crops, and particularly for Peas and Beans. The spot is an open and breezy one, with no trees near to draw goodness from the soil, or cast shadows across the trial rows. The season, if a little retarding, has been on the whole favourable to the development of the plants, and though there was a dryness in the soil, the good holding qualities and careful cultivation of the land had fully developed the character of the samples under proof.

I must not be understood as being desirous of suggesting there were 700 sorts. In a firm of such large business connections as Messrs. Hurst & Sons, the same variety of a Pea will come into the warehouse from different sources, and in varying quantities. A sample of each bulk is taken, recorded in a book, and sown—a certain length of line of each. It may thus happen there are twenty rows of a popular variety like *William 1st*, all side by side for complete comparison. The time of sowing, the colour of the seed, the particular bulk from which the sample is taken, the time of flowering, the height, the time of podding, and the general characteristics necessary to be noted, are all recorded. The carrying out of such a trial is a work of immense labour; constant attention and examination are necessary; comparisons are made, and results duly noted. This is all done by Mr. A. Newby, the superintendent of the seed trial grounds, whose knowledge of Peas must be very great. The quality of every bulk is thus ascertained. The seeds of all the best and truest samples are carefully saved for stock purposes, and in this way our leading wholesale seed houses, who have many hundreds of quarters of Peas passing through their hands, are thus enabled to keep their stocks true and pure. The seeds of one of these rows is sown again next year; it is subjected to rigid selection, and enough is thereby obtained to sow a

new acres. This rigid selection is all the more necessary, as some sorts of Peas are prone to revert to inferior types. William 1st and Stratagem may be mentioned as cases in point.

Of the early white round Peas, of which enormous quantities are grown for garden and market purposes, Improved Sangster's No. 1 is clearly the best. It is known by several names—First-and-Best, Caracacus, Dandy, Rural New Yorker, &c.; it was even in character, early, cropping well, and excellent as a first early sort, hardy in character, and moderate in price. In height it is about 2½ feet, but near it were samples of Sangster's No. 1, 4 feet in height, small podded, and generally poor.

William 1st is a round blue indented Pea, an elementary form of the wrinkled, but with a fatal tendency to deterioration. It appears to be in the nature of the variety, as if it possessed an angular

but it is grown largely in France. Blue Peter may be regarded as the blue round form of Beck's Gem, but is a little later in podding. First Crop Blue is yet a little later than Blue Peter, a trifle taller, and produces larger pods. Pride of the Market, also a blue round Pea, is the twin of Stratagem, the latter being its wrinkled form. It is a very hardy variety, and can thus be sown in autumn; it is very largely grown for market in this country. Bishop's Longpod, an old variety, which has been in cultivation for some half century. It is about 2 feet in height, a second early, very hardy, and cheap in price; it is also in great demand in France, where small Peas find greater favour than large ones. Harrison's Glory, another old variety, is a second early round blue, and a good succession to Eclipse, being a free bearer; it is grown very largely in the east of England for selling in a dry state for boiling.

duces large, well-filled pods. There is a great future before this variety as a market Pea. Ameer is in the same way, but has green round seed; it is an early type of Supreme, bearing large broad handsome pods—it is also of fine table quality.

Prizetaker, an old variety, is now superseded by Telegraph, and the former is very apt to run back to an inferior form. The latter, which is a round form of the popular Telephone, is a fine market Pea, superior to Prizetaker in all respects, and produces long, handsome, well-filled green pods. A very fine and true stock of Telegraph could be seen at Kelvedon, but it is also very apt to run back.

A very useful second early blue round is found in Lye's Favourite; it grows to the height of 4½ feet, and is an excellent cropper, producing long, white, slightly-curved pods, with ten and eleven Peas in a pod.



FIG. 25.—VICTORIA PARK, TIPTON. (SEE P. 98.)

moral nature. The finest stock, known as William 1st Extra Selected, is 3 feet in height, and very uniform. It is quite early, and is better flavoured when cooked than the ordinary white round varieties. William the Conqueror has also blue round slightly indented seed; it is from 3½ to 4 feet in height, with long, full, green pods, in which as many as ten Peas can be counted—an excellent market variety. Harrison's Eclipse may be taken as the best representative of the early round blue Peas, and it includes several synonyms, Earliest of All being the best known. Universal experience attests to the fact that blue round Peas are better flavoured than white ones, and Eclipse has well filled green pods. It is a variety in large demand for market purposes.

Beck's Gem is one of the oldest of the early dwarf white round Peas, almost as early as Improved Sangster's No. 1, and about a foot in height, though not in great demand in this country, being superseded by William Hurst, Chelsea Gem, and others;

Gladiator (Laxton) is a Pea grown very largely in this country and in France for market purposes; it is generally recognised as a great improvement upon Fillbasket, having larger pods, while it is a good cropper. Bedman's Imperial is another green round, the seed larger than that of Glory, it has rather shorter pods, but they are broader. It also is largely grown as a boiler in a dry state; it is tenderer and better flavoured.

Princess Royal, a rather large, white, round Pea, and which is regarded as a dwarf form of the Victoria Marrow, as well as being earlier in bearing, was one of the first fruits of Dr. Maclean's efforts at cross-fertilisation, sent out by Mr. Turner, and has been in cultivation over forty years. It is largely grown by the French, who appear to regard it as a large-seeded Bishop's Longpod.

Of the newer Early White Round Peas, Sutton's Bountiful takes high rank; at Kelvedon it was three days earlier than Improved Sangster's, and pro-

What a singular-looking Pea is the Reverse Podded Sabre! It is an inversion of things natural in Peas; instead of the point of the pod curving to its under side, it bends back the other way. It is a curiosity in this country, but it is in demand in France; it grows to height of 4½ feet. The old Victoria Marrow, known also as Thurstan's Reliance, is rapidly going out of cultivation in this country, but it is in demand in France.

Of the dwarf-wrinkled Peas, William Hurst needs no recommendation; it is dwarf, and a free cropper. Another variety is Sutton's Seedling Marrowfat, about the same height, but perhaps three days later in being fit to gather. Chelsea Gem is simply a white wrinkled selection from William Hurst, and a little stronger grower. William Hurst is rapidly taking the place of American Wonder, which is going out of cultivation. English Wonder is a small, short, tight-podded dwarf Pea, not quite so early as William Hurst. Sutton's Harbinger is both very dwarf in

growth and early to crop; it is about the same height as William Hurst, producing remarkably large Peas in short pods; it appears to be a model variety for growing in pots for an early crop. Improved English Wonder has pods double the size of those of the type, and it is a very free bearer; a capital sort for small gardens where space is limited.

Gradus is perhaps one of the very finest of the early wrinkled Marrows, as early as William 1st, 3 feet in height, and bears freely very handsome dark-green pods; it can be classed as a distinct variety. Sutton's May Queen, Early Giant, and A1, are all early wrinkled varieties: May Queen is the dwarfest and earliest, being four days before the Giant; A1 has rather the largest-sized pods—they are excellent garden varieties, but the pale pods, of May Queen especially, discounts somewhat their value for market purposes. Dr. Hogg, also 3 feet in height, can be classed with the early Marrowfats, it is a great cropper, and produces large well-filled pods; it is an excellent garden Pea, but does not appear to be so much grown as its merits deserve. Webb's Senator is in the same way, 2½ feet, crops well, with light curved pods.

Daisy Pea (I think one of Carter's introductions) may be regarded as a pale-podded Stratagem, bears well, pods large and well filled, an excellent garden variety. Like its relative, Stratagem, it needs to be closely selected. Yorkshire Hero is probably the best of the Maincrop wrinkled Peas for market purposes, and more of it is sold to market gardeners than any other wrinkled variety.

An original stock of Veitch's Perfection was very fine. The old and favourite variety is known under a whole host of synonyms, and when in its best form holds its own against many new introductions. The stock of it at Kelvedon was remarkably good. Triumph, which appeared to be identical with John Bull, is very largely grown by market gardeners in the London district; it bears handsome, pointed pods. Dr. Maclean bears fine pods, but it is a variety apt to take the mildew. Webb's Pioneer greatly resembles Gradus. Sharpe's Queen is of the Stratagem type, but taller and later; it also is subject to mildew. Omega is one of the most useful of the late wrinkled Peas.

Duke of York is of the character of Duke of Albany, dwarfed, producing very fine green pods. Autocrat is, perhaps, the finest late Pea, distinct, valuable, producing fine pods of the Ne Plus Ultra type; but Cuttle, which is the result of a distinct cross, is an improved Autocrat, with a bigger pod, very fine, and having strength of constitution, resists blight well. The Gladstone, like the preceding—a new variety, and growing to the same height, 3½ feet—is remarkable for the number of Peas it produces in a pod, averaging eleven; it is a very fine late variety, and may be regarded as an improved St. Duthus. Prince of Wales, 3 feet in height, and by no means new, is a general favourite all over the country, both for produce and quality; the stock of this is very fine. Walkers' Perpetual is a white-seeded Veitch's Perfection. Empress of India is like a green form of Bountiful.

Between Eckford's Essential and the new Pea Thomas Laxton, which recently received an Award of Merit at Chiswick, we could not detect any difference. They were growing side by side at Kelvedon under the same conditions, and the difference difficult to detect.

Two new varieties shortly to be offered by Messrs. Hurst & Son appear destined to make their mark. One is Hurst's Conquest, 4½ feet, which produces large, pale, blunt pods in pairs; they are long and well filled. It is a blue, wrinkled Pea, and likely to become a very popular garden variety. The other is Hurst's Incomparable, 4 feet, a white wrinkled marrow, with large, well-filled pale pods, rather more pointed than the preceding. It also promises to be a very fine garden variety.

Hurst's Reliance, which has only recently been distributed, is of the early Ne Plus Ultra type, but not so tall in growth; it produces well-filled, large-sized blunt pods. That popular variety, Telephone, was seen here in its finest character; it is grown

very largely in the Channel Islands for an early crop. Duke of Albany was also remarkably good. It must be said of the once favourite Champion of England that it is fast dying out. Forty-fold is a blunt-podded type of it.

Of the very tall Peas, Tall Green Mammoth, with its large pods, is still a popular tall variety much in demand. British Queen is still much called for; large quantities go to France. Very fine stocks of Ne Plus Ultra were also here, still a grand, tall, late Pea, though probably less grown in gardens than formerly. Old varieties are still required in various parts of the country, and a supply has to be provided.

Growing by itself was a breadth of Pierremont Gem, which was distributed by Messrs. Kent & Brydon, of Darlington. It is a dwarf-growing variety, and for its height—not more than 1½ foot—produces very large pods, while it is a rare cropper.

It may be asked, "Is it necessary to retain so many varieties, to say nothing about names?" I have just counted 112 names in the catalogue of a leading wholesale seed-house. Some of these are merely synonyms, but as the same variety is asked for under different names in various parts of the country, they must be published in a list. No persons would welcome a reduction of the varieties of Peas so eagerly at the wholesale seed-men; but they are practically powerless. So long as varieties are asked for, they must, in the interest of business, be supplied. New varieties which are improvements upon old ones find their way very slowly into some parts of the country. That some weeding-out is highly necessary, but who will take the initiative? If the task is ever undertaken by the Royal Horticultural Society, it should be by means of a comprehensive trial made right in the open breezy country, and in suitable soil; but any committee competent to deal fully with the matter should be largely recruited from the wholesale seed trade. *R. Dean.*

SYRINGA, OR LILAC.

Much advance has been made in recent years in the case of this genus of hardy shrubs, owing, in a great measure, to the industry and skill of MM. Lemoine, of Nancy, and some few other French nurserymen; and not only in colour of the flower are improvements noticeable, but in fragrance. In double-flowered Lilacs, the doubling is greater and the clusters larger than those of the older varieties. Among single-flowered varieties, the following are excellent, viz., Souvenir de Louis Späth, the finest of the single-flowered, dark-bluish lilac, large handsome trusses, and the darkest in colour yet raised. Madame Kreuter is another fine variety, with bright reddish-lilac flowers, a distinct colour, and the rip a very handsome one. Duchess of Orleans is a fine pale blue flower, and valuable for its lateness. Philémon has a fine truss of very dark bluish-lilac flowers, and it is distinct in habit, and very free to flower. Alba grandiflora and Madame Legraye are both good pure white varieties of dwarf habit, and equally adapted for forcing. Among double-flowered varieties, with good fragrance, there are of the newest and best:—Alphonse Lavallée, a grand variety, with blue flowers, shaded violet, perfectly double, and the truss very fine; Charles Baltet, very free-flowering variety, with lilac-coloured flowers, shading to rosy-mauve; Le Gaulois, deep scarlet flowers in large trusses, perfectly double—distinct and handsome in appearance; Léon Simon, a beautiful variety, having bluish-crimson flowers, the buds being coral-red before expanding; Madame Abel Chateau is a new variety, with pure milk-white flowers, perfectly double, and borne on immense trusses; Madame Casimir Perrier, which in my opinion is the prettiest of all the doubles, of a creamy-white; Madame Fernande Viger has immense trusses, often 1 foot in length, of white flowers, delicately scented; Madame Lemcine, a grand white-flowered variety, perfectly double and fragrant, resembling in miniature a double-flowered Bouvardia; President Grey, a pretty variety, bearing good sized trusses of cobalt-blue flowers, with a distinct rosy edge; President Carnot is in colour pale lilac, shading to white, and

it is both pretty and distinct; Senator Volland exhibits large trusses of rosy-red flowers, and is one of the most brilliant of all the double-flowered forms. Lilacs grow well in almost any garden soil, and are readily increased by means of root-suckers; while in the case of select varieties, they are easily increased by grafting on the common Lilac in March, and also by cuttings in the autumn. *E. S., Woking.*

COLONIAL NOTES.

TRINIDAD.

THE annual report for the year 1897 is a very satisfactory document, showing evidence of energy and judgment on almost every page. The subjects treated of are very numerous and varied; some have reference merely to ornamental plants, others to those of economic importance. In the case of Sugar, the object of the experiments in progress is to secure canes which will produce a larger proportion of saccharine matter, so that with no increased expenditure of labour or machinery, a more profitable product may be obtained. The raising of seedlings, a comparatively new process, gives hopes that some such variety may be found. A lithographic illustration of some of these seedlings is issued with the Report. Cacao also receives much attention at the hands of the Director. It appears that the manufacturer is specially desirous of obtaining produce of uniform quality, and that to secure that, he mixes or blends the produce of one island with that of another.

The *Coffea stenophylla* grows freely, but it is not so robust as the Liberian Coffee. Its produce, reports the Director, is of a quality to take its place at once upon the markets as a first-class Coffee of the Mocha type.

As in other tropical gardens, much attention is paid to rubber-producing plants. India-rubber is the produce of *Ficus elastica*; Para-rubber of *Hevea brasiliensis*; Ceara-rubber of *Manihot Glaziovii*; Demara-rubber of *Hevea Sprucei* and *H. pauciflora*; African-rubber of *Kicksia africana* and *Tabernaemontana crassa*; West African rubber of a species of *Landolphia*; Central American rubber of *Castilleja elastica*, trees and climbers of different natural orders, but all furnishing latex. *Castilleja elastica*, a tree, is the one most suitable for culture in Trinidad, and great hopes are entertained from it.

In future it appears the decorative gardens will be separated from the economic department. Government-house will be the centre of the ornamental gardens; whilst the trial grounds, experiment, and botanical stations will be gradually established at St. Clair.

The average rainfall at the present garden is put down at 65.9 inches, of which the larger portion falls in August. The driest month is February. The mean annual temperature is 79.1.

HATFIELD.

On the occasion of the Garden party given by the Marquis of Salisbury on Saturday, July 23, Hatfield looked its best this year. The trees wore their greenest livery; the turf was just of that tint which pleases the gardener best, but is rarely seen at the end of the month of July, unless the skies have been more than ordinarily propitious, or a system of water-mains exists to supplement or take the place of a natural supply; and, lastly, the two herbaceous perennial gardens, the present glories of the place, were in the finest condition. We do not remember to have observed anywhere else such an abundance of strong masses of *Delphinium*, *Lychnis coronaria*, *Mona-da didyma*, *Chrysanthemum maximum*, of the white-flowered *Lavatera*, *Oenothera Lamarckiana*, Sweet Peas, and of Roses, especially *Crimson Rambler*, and old-fashioned Roses, such as the *Ayrshire Rambler*, *Ruga*, *Souvenir de la Malmaison*, *Baron Prevost*, *Félicité-Perpétue*, *Devoniensis*, &c.

Everything herbaceous was in large quantity, and much repetition in the matter of varieties had evidently not disturbed the mind of the planter, Mr.

Norman, his Lordship's gardener, is a believer in good spademan'ship and the virtues of manure, and it is to deep trenching and heavy manuring that his successes with the foregoing are mainly due. There is that about Hatfield which reminds one of the stiff primness of other days: the rectangularity of the enclosures about the mansion, the covered promenades of clipped Limes at least 250 years old, the terra-cotta balustrades and steps and pillars to the several terraces, the maze (newly planted, and not yet grown up to be a maze in actuality), the avenues of old trees and arboreal survivals (as, for instance, the two Mulberry trees, said to have been planted by James I.); and all these things charm one more than the finest and newest production of to-day. The old style of bedding-out is quite given up, and "mixed" bedding has taken its place, and generally to the advantage of the latter. We may here instance a few types of the latter, arranged as are all the beds on turf. *Crocus aurea* and *Francoa ramosa*, with *Viola Bullion* as the groundwork; *Crocus* mixed with a white flowered *Antirrhinum*, and the same *Viola* as an edging. In the garden to the south of

Hamburgh. Mr. Norman avoids having split berries in Madresfield Court by following out rigidly the methods he advises in his Calendar—viz., ventilation at all times, and the use of artificial heat at the critical period. We were shown a Royal George Peach-tree in a forcing-house, which annually carries from 300 to 400 fruits. This part of Hatfield gardens is mainly devoted to supplying the needs of the large establishments here, in London, and elsewhere; and everything is made to subserve this end, for there are no nicely-kept gravel walks or edgings of any kind in the dozen acres of kitchen garden, no labour wasted on mere appearances, but everything seems to be well cultivated, as it needs must where so much good produce of every kind is required.

Capital fruit-trees cover the walls, and even in this not over-abundant fruit year these trees generally are well cropped. In the plant-houses the same wholesale market-garden methods hold good, and great stocks of plants of *Adiantum Farleyense*, *Calanthe Veitchii*, *Roses*, *Souvenir de la Malmaison* and *Uriah Pike* Carnations, and Palms of large and small sizes for house decoration, were noted.

wrote that if I could find time to run down I could see nearly all his hybrids in flower, I lost no time in responding, and soon after midday I was in the saddle, and speeding along the cyclist's favourite Bath Road, en route for Woodside, Farnham Royal. On arrival I was soon introduced to the objects of my visit, and a most interesting lot they were.

First must be mentioned plants of the true wild *Senecio cruentus*, with small, light purple flowers, and of the shrubby *S. Heritieri*, with much larger white flowers, tipped with rosy-purple on the ray florets, small leaves, and densely tomentose white stems. Mr. James's first experiment was to cross *S. cruentus* with the pollen of *S. Heritieri*, and the result was five seedling plants, which flowered a year ago. Two of these had been kept, and were then flowering well. They are unmistakable hybrids, presenting the usual intermediate character. They are more shrubby than *cruentus*, and are plentifully covered with tomentum on the stems and undersides of the leaves. The first is much like *Heritieri* in the size and details of the leaves and stems, and the flowers are white, and most like *cruentus* in shape, but twice as large. The second has much larger leaves, tinged with purple underneath, purple stems, and slightly larger brilliant crimson-purple flowers, thus showing more of the *cruentus* character. The other three plants are now lost, but Mr. James remembers that one had pale-pink flowers, another white flowers tipped with pink, and the third, white flowers tipped with blue, and that they were true hybrids, like the preceding in general character.

These five primary hybrids on flowering were intercrossed together, by transferring the pollen in various ways, and the result was the large batch of plants now in flower, which almost fill one house, and show the most bewildering range of variation, though in general character they agree with the original hybrids from which they sprang. In fact, they may be termed hybrids perpetuated from seed, for the intercrossing was only between themselves, not with any other kind.

As this large batch of seedlings began to show their character they were divided into groups, those most resembling *cruentus* in habit and foliage being placed at one end of the house, and those most like *Heritieri* at the other end, the former group being slightly the larger of the two. And this grouping by habit afterwards proved to agree pretty well with the character of the flowers, for those with the *cruentus* habit had generally more numerous smaller flowers than the other, though as regards colour many variations in one group could be matched in the other, or nearly so. The tipped forms, however, were rather more numerous in the *Heritieri*-like group, and the selfs in the other. It was most interesting to see this wide range of variation, and the following were noted as the more typical forms, though they were more or less connected by various intermediates.

In the "cruentus-like" group were pure white, light blush, rose-pink, rose-purple, deep purple, and bright carmine-crimson selfs, and forms tipped with pink and slate-blue of different shades and widths, but all had a compact inflorescence of numerous rather small flowers. The "Heritieri-like" group contained pure white and bright rose-purple selfs, and a large series of tipped flowers, the colours ranging through lavender, slate-blue, pale pink, rose-pink, to bright rose-purple, and the breadth of the ring of colour varied from the merest touch at the apex of the ray florets to those in which the white was reduced to a narrow ring at the base. Most of these had a less compact inflorescence of larger, more stellate flowers, than those of the other group. Two or three of the seedlings very closely resembled *S. Heritieri* in habit, and one could scarcely be distinguished by vegetative characters, yet the just opening flowers showed strongly their hybrid origin.

And now one may ask, what light this interesting experiment throws on the vexed question of the origin of the garden Cineraria, in which connection we may recall the plant described by Willdenow in 1809 as *Cineraria hybrida* (*Enum. Pl. Hort. Berol.*, p. 893), which he said was cultivated in gardens under the name of *C. cruenta*, but was abundantly different,



FIG. 26.—AZALEA INDICA, IN THE GARDEN AT CLYNE CASTLE, S. WALES.

the mansion Fuchsias as standards are used—viz., *Defiance*, *Madame Cornellissen*, *Lye's Own*, and *Mrs. Rundle*, *Swainsonia galegifolia* being dotted between, and dwarf Fuchsias with yellow leaves form the groundwork. Scarlet-flowered *Nasturtiums*, both climbing and bush, are dotted here and there, the climbers being attached to the bare stems of the Fuchsias. It will doubtless work out satisfactorily, but it struck us that the plants were not sufficiently forwarded, and the season would be past before the best effect was obtained. This style, with many variations in the plants employed, obtains generally in the gardens; and it is interesting, but not at a distance effective, owing to the lack of colour—that very essential material in every picture that is not black on white.

The keeping of the gardens and pleasure-grounds about the mansion is admirable, and shrubs and trees appear to receive great attention, although rare species are not often met with. The vineries, plant-house, and kitchen gardens are remote from the house. The vineries number seven, and the Vines of all kinds seemed to be in capital health; and they certainly carried very fair crops of bunches, either well finished or finishing up. The varieties grown include *Gros Colman*, *Madresfield Court*, *Lady Downe's seedling*, *Alexandrian Muscat*, *Foster's seedling*, and *Black*

AZALEA INDICA AT CLYNE CASTLE.

MR. MILNER, in his notice of the *Azalea indica* growing out-of-doors at this place made a mistake which was evidently the result of a misunderstanding on his part. It is that the Azaleas are never protected in the winter. Some of them are not protected, and last year not any of them were covered, and I am sure that they are the better for it. But our usual mode of procedure is this:—About the middle of November we place a light framework of rods over them, held up by short forked props. If the weather becomes very severe, we scatter a quantity of Bracken over the rods. The illustration (fig. 26) shows our largest plant of *Azalea indica alba*, which is 12 feet in diameter, and nearly 6 feet in height, and is one of the plants not protected. *T. Foote, Clyne Castle Gardens.*

HYBRID CINERARIAS.

IF we cannot at the present day trace the successive steps by which the florist's Cineraria has been evolved—at all events during the early stages of its history—the circumstance gives an additional interest to the attempts now being made to demonstrate it experimentally, and when the other day Mr. James

having flowers nearly as in *C. lanata* (another name for *Heritieri*). The only suggestion as to its origin is contained in the name, but it is evident that Willdenow thought the plant to be a hybrid between the two species in question, and I believe that he was right, and that Mr. James has now raised the same plant. Both species were in cultivation at this time, and the pollen would readily be carried about by bees, who are fond of these plants—in fact, about a dozen were busily at work in Mr. James's house when I was there. And the hybrids once raised would certainly be preserved, for they are such a great improvement horticulturally on the wild *cruentus*, that one can easily imagine how the improved race would sooner or later displace the other.

In the case of Mr. James's hybrids, a possible objection may be urged, namely, that all possibility of crossing with the garden *Cineraria* was not eliminated, especially as bees are so fond of the flowers; but for several reasons I think it has no practical force, and in any case it cannot apply to Willdenow's plant, when the improved garden *Cineraria* was not in existence. In the first place, the reversed hybrid has been raised at Kew, a plant of *S. Heritieri* having been placed under a fine gauze net, and carefully crossed with pollen from the wild *cruentus*, and the result was a hybrid having the essential characters of those raised by Mr. James, in fact, less different than many of those were from each other. Indeed, it might have been almost, if not quite, matched among those with tipped flowers. Again, both *Heritieri* and *cruentus* were crossed at Kew with the garden *Cineraria*, and, as would be expected, the hybrids in each case have far larger flowers than those raised by Mr. James. This evidence is sufficiently conclusive, and it should further be mentioned that Mr. James had this batch of hybrids in a house a considerable distance away from those in which his strain of the garden *Cinerarias* are grown. In fact, all the evidence goes to show that these hybrids were derived solely from the two species in question.

It is interesting to have reproduced the long-lost *Cineraria hybrida*, or *Senecio hybridus*, as I believe that Mr. James has done, and while, from a decorative standpoint, it marks a great advance on the wild *cruentus*, there is yet an enormous gap between it and the garden *Cineraria* of to-day, and this gap, or the rather wider one which separates the latter from the wild *cruentus*, has been filled by a long process of selection, and the successive steps illustrate the great principle of evolution in actual progress.

How far these facts throw light on the origin of the garden *Cineraria* may be left for individual opinion, and it is admitted that the latter shows no trace of the shrubby habit of *S. Heritieri*. This point, however, may be misleading, for in practice the garden *Cineraria* has been made an annual, and that would tend to eliminate the shrubby character; and in this again the principle of evolution is seen at work. It is in the flowers that the resemblance to *Heritieri* is chiefly found, and this is precisely what might have been expected. It seems to me highly probable that a race of plants with shrubby habit and improved flowers might be derived from these hybrids if selection were carried out in that direction, and this process would tend to eliminate the *cruentus*-like character from the vegetative organs. I believe it is this object, rather than that of reconstructing the garden *Cineraria*, that Mr. James has in view. Lastly, it may be remarked that Mr. James has the true *Senecio populifolius* in cultivation, and some hybrid seedlings between it and *S. cruentus*, which were not yet in flower. There were also the true *Senecio tussilaginis* with brilliant rose-purple flowers, and the yellow *Cineraria lobata*, the latter being the only true *Cineraria* in the group, as the rest technically belong to *Senecio*. R. A. R.

STRAWBERRY CULTURE IN FRANCE.

THE Strawberry ranks amongst the most highly-prized fruits in France. It has attained its present pre-eminence, thanks to the ease with which crossing varieties can be done by an intelligent horticulturist, and although the varieties are legion, they are only modifications of half-a-dozen specific types. Cultivation has not only singularly prolonged the duration of the period of its flowering, but also the size and the quality of the fruit. The Strawberry in France is divided into two well-recognised classes—the small or the *quatre-saisons*, and the large or the *grosses fraises*. These differ, not only in appearances and qualities, but in mode

of raising and of culture. The small Strawberry is produced from seed, the large varieties from the stolons or runners of varieties raised from *F. virginiana* and from *F. chiloensis*. Strange, that although the wild plant is indigenous to Greece, the classical authors make no notice of it. Pliny and Virgil only allude to it nominally. The *quatre-saisons* Strawberry keeps growers on the alert to produce a fruit at once large, of a tapering shape, and of a deep red colour. To obtain the seed from which it is invariably raised, fruits are selected when perfectly ripe that present the required points of excellence, are crushed with care, and the seeds separated from the pulp; these are washed, and the pulp strained through a cloth. The seed is then collected and dried in an airy and shady spot. This seed can be sown in the open air in May and June on a specially prepared plot of ground, but the plants are not so good as those resulting from seed sown at the end of the month of March or early in April on a hot-bed. The seed should be covered thinly with leaf-mould, and when the plants come through, air should be admitted gradually. When the plants possess a few leaves, they should be dibbled-out in September in tufts of two together, 6 inches apart, and from 12 to 20 inches asunder, on the permanent bed, for which the soil ought to be sandy and fresh, and the spaces between the plants covered with a mulch of short manure. Some cultivators make a new bed in another place, but do not afford fresh soil. Following the period of planting, the Strawberry plants will commence bearing in the second spring or autumn. It is well to dibble out the plants from the main stools at a distance of 2 feet apart every two or three years, or the plants will quickly degenerate. Avoid employing mould from an old Mushroom-bed, as it tends to redden the leaves, and in the end kills the plants. The subsequent culture is very light and easy; water is frequently and moderately afforded during the fruiting period, and the beds freed from weeds, removing useless runners and decayed leaves.

Strawberries are procurable so early in the spring, that forcing the plants is regarded as rather an ornamental than a commercial matter. The plants for forcing are those of the large-fruited varieties, and these are grown in pots filled with good loam. A rich, friable soil, consisting of silicious sand, clay, oxide of iron, and carbonate of lime, is most favourable to the cultivation of the Strawberry. The pots should be brought under cover in October and in December; forcing commences at 55° Fahr., gradually rising to 75°. In most respects the methods employed resemble those pursued here. The varieties of Strawberries to grow are as numerous as the gardeners please to make them. The varieties which have no runners, such as the *Gaillon*, is naturally good for out-of-doors culture. As a rule, in France at least, the white Strawberries are not prized. The English types have exercised a great influence upon those of France, such as the *British Queen*, *Keen's Seedling*, and *Deptford Pine*. For forcing, *Docteur Morère* is in great request, its fruit is large, rose-coloured, perfumed, and sugary; *May Queen* is precocious and prolific, the colour is deep red, and the quality good; the *Margaret Lebreton* suits all lands, is of a remarkable precocity and fertile; *Victoria* is a good variety that suits poor soils, is perfumed, juicy, yields well, and exacts no special care. All the large-fruited varieties are descendants from *F. virginiana*, a native of the United States, and *F. chiloensis*, from the Chilean Archipelago.

The earliest open-air crop of Strawberries comes from Carpentras, in the département of the *Vaucluse*, about the last week of April, the supply continuing till the middle of June; the commencing price is 3 to 5 francs the kilogramme; then 60 to 80 francs the double hundredweight, ultimately falling in price as the season advances to 20 francs. An acre of beds can produce 1½ ton to 5 tons of fruit; the profit per acre, after deducting all expenses, varies from 400 to 1,200 francs. In some districts Strawberries are raised in rows between the Vines.

In the *Vaucluse* mineral manures have been tried on Strawberries, on the proposition of the Minister of Agriculture. The result has not realised expectations so far. Nitrate of potash, in small doses, stimulated the plant too much, and destroyed the beauty of the fruit. In the valley of the *Durance*, and the region traversed by the *Carpentras Canal*—once a waste and arid region—the finest Strawberries for the Paris market are now produced. The average price of Strawberries at the central wholesale markets of the city, is from 1 franc 65 centimes to 4 francs per basket of 6½ lbs. It is Carpentras that supplies the

large, and *Hyères* the smaller and more esteemed varieties. During the full tide of the season the costermongers sell the fruit at 2 sous, or one penny per lb. *Fresenius*, in 1857, and *Buignet* in 1859, analysed the Strawberry. The latter chemist dealt with fourteen varieties, and chiefly those appertaining to the wood or Alpine family; they were found all rich in malic acid and sugar. In France the fruit is eaten with red or white wine, sugar, rum, *kirschwasser*, orange-juice, or sugared water. Strawberries smothered in cream are not patronised, being viewed as indigestible. The same objection is made against the white Strawberry, unless it be mixed with the small "*quatre-saisons*" variety.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Peaches.—Trees on which late crops of fruit are swelling require an abundant supply of water at the roots. The fruit is largely composed of water, the accumulation of which is very rapid between the stoning and the ripening period, so that the size and quality of the fruit depends on the supply of water and nourishment at the roots. Add manure to the water at alternate waterings. When the weather is bright, syringe thoroughly twice a day, so as to have the trees as free from red spider as possible when the fruit begins to ripen, at which time syringing must be discontinued. Tie to the trellis shoots that require so doing, and stop those that have grown to their allotted distance. To give colour, expose swelling fruit to the sun as much as possible, by putting the leaves on one side, and taking one or two off where they shade the fruit. Pinch laterals to two leaves. Should Thrips be present, fumigate with XL compound. When the fruit begins to ripen, fix a net under the trees at such a distance that when the fruits fall into it they may not get bruised. Fruits that are at the extreme parts of the tree, and which would not fall into the net, should be prevented from falling to the ground by having pieces of net placed round them loosely, so as not to bruise them. The temperature for the late Peach-house while the fruits are swelling may be regulated according to the time the fruits are required to be ripe. If they are to be brought on quickly, heat may be employed in the hot-water pipes in dull weather and at night. Otherwise they should be treated in the same manner as crops earlier in the season. Free ventilation is essential to good colouring; they may be retarded by free ventilation by night and day. The most should be made of the top ventilation, not opening the sides when the weather is cold, and thus avoiding a draught. When the fruit is gathered from a tree it should be gone over without delay, in order to remove all weak and surplus wood that is not required for next season. This will permit the wood left in the tree to be ripened better, and will add to the facility for syringing the foliage, so as to keep it clean and healthy to the end of the season. Healthy leaves on well ripened wood in the autumn furnish a good augury for strong, healthy blooms in the following season. In the afternoon of fine days give a thorough washing with the syringe or garden engine, using sufficient force to dislodge red spider without tearing the leaves. Now the fruit is gathered, if the trees have become infested with scale, it may be kept in check by syringing with water that has had soft soap or Gishurst compound dissolved in it at the rate of two ounces to the gallon. Keep the ventilators of the house open, only shutting the top ones against hail. Examine the soil of the border in which they are growing, and when it is approaching a state of dryness give a thorough watering. Peach trees that are growing in pots require strict daily attention in the matter of watering—do not let them suffer for the want of it; their other requirements are the same as for trees growing in borders.

Cherry and Plum Trees.—After the fruits are gathered attend to all their requirements, frequently going over them to pinch back laterals. Give thorough waterings whenever the soil shows sign of dryness; syringe in the afternoon of fine days. Should black-fly appear fumigate, and keep the house cool with free ventilation. Plums that are not ripe, but which are required to be hurried on, may be treated in the same way as Peaches, bearing in mind to force as much as possible with sun heat by shutting early in the afternoon; after syringing if the temperature rises to 90° no harm will occur.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

The Rose Garden.—In localities where little or no rain has fallen for some time, a good soaking of water should be given to the Rose-plants, to maintain them in a healthy condition, and to assist in the development of late flowers. All dead blooms should be removed regularly, to keep a tidy appearance; the soil should be frequently hoed, for the double purpose of destroying weeds and of preventing rapid evaporation. In places where green-fly has reappeared, the plants should be syringed with carbolic soap, as advised in a previous Calendar. Climbing Roses will now be rapidly making long vigorous growths, which should be nailed or tied as the case necessitates.

Violets.—Pay every attention to these at the present time, and onwards throughout their season of growth if satisfactory results are expected during their flowering season. Continued waterings will be needed to keep the plants in a healthy condition, and the syringe should be used freely among the foliage to prevent red-spider. If this pest has already appeared on the plants, they should be syringed with a weak mixture of soft soap and tobacco-water. The under surface of the leaves is the place where the spider will chiefly be found. The surface must be thoroughly wetted with the solution for the destruction of this pest. Keep the plants free from weeds, and stir the surface-soil frequently with the hoe.

General remarks.—Keep the lawns frequently mown and the hedges constantly edged. Pay especial attention to the turf forming croquet and tennis grounds, as these places will be frequently in use at this season of the year. Mow these with the machines twice a week, and roll with a heavy roller after each mowing. Frequent rolling of gravel walks will be necessary to allow of walking in comfort, and where weeds appear they should be hand pulled or destroyed by weed-killers. Remove all weeds by hoeing from shrubberies planted last season. Afford water to any trees or shrubs which are suffering from drought. Creepers on walls, such as Honeysuckles, Clematis, Wistarias, Kerria japonica, and others should have the leading shoots nailed in, and the superfluous ones removed; these will also be greatly benefited by a good soaking of water. Sweet Peas going out of flower should have the dead flowers removed. The best way to prolong the flowering period of Sweet Peas is to constantly cut the flowers, thereby stimulating the growth of the plants and enabling them to produce fresh growths, and consequent prolonging of the flowering period. A good soaking of water and a mulching of half-rotten manure will go a long way towards keeping the plants in a good state of growth, and flowers in abundance may be expected for some time to come. The leaves of the Lime have already begun to fall, and a continued use of the broom will be needed to maintain a neat and tidy appearance, which the garden should present at this period of the year.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Endive.—Early transplanted Endive will at this season require frequent watering. Young Endive plants in seed-beds should also have plenty of water to prevent them becoming stunted or hard in growth before being planted out. Early Endive is best grown on a shady border, and later batches should be grown in a south sheltered position.

Late Carrots.—Sow some seeds now of the early Horn Carrots, choosing a light, free soil. Sow again about the middle of the month. A cold pit, or frame, in which some seeds may be sown at the end of this month, will be found useful in producing tender young Carrots during the winter with but little trouble. Keep the soil free from weeds around the spring-sown crops, and remove any flower-stalks that have been thrown up. During a showery day thin out late sowings.

Turnips.—Run along the rows of late-sown Turnips with a Hawe's watering-pot fitted with a fine rose, in the evening, in order to keep them clean and strengthen them. It will suffice to use clean water.

Parsley.—Thin and weed the late-sown Parsley, and make another sowing on a warm border.

Large Onions.—It will not be necessary to give much more plant-food to this crop, one good soaking of clear water should be given and the bed be left for a time. Remove from the base and around the bulbs any soil that may prevent the bulbs developing. Heavy autumn rains often burst many of the finest bulbs, and also destroy their keeping

qualities. Anything that can be done to encourage early maturity of the bulbs is a gain.

Vegetable-Marrows.—Remove the fruit as soon as fit to cut, and cut off any fruits that may be too old for kitchen use. Give the plants a good watering at the root once every week should the weather be dry.

French Beans and Scarlet Runners.—Pick the pods of French Beans daily, and give water to plants that are coming into bloom. Should the plants flag for want of water, they will not set a good crop. This rule applies also to Scarlet Runner Beans.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

The Fruit-room.—Everything about a fruit-room should be made clean and sweet before the earliest of the fruits have to be placed therein. Thatch makes the best roof, straw and reeds being non-conductors, thus preserving those conditions of equality without which fruit cannot be kept in fine condition, although thick or double wall, or walls lined with hollow bricks, and a tiled roof, with a good loft over the fruit-room, ensures almost the same conditions. The worst of thatch is that it harbours vermin, but a piece of small-meshed wire netting run along the edges of the thatch and turned up for a foot on either side will do much to prevent their ingress; and for stopping holes near doorways and similar places, nothing is so good as sheet zinc, if it can be properly fastened. Strong-smelling substances, such as tar, paint, &c., should not be used inside a fruit-room, or the flavour of the fruits may be affected thereby; and for the same reason, the shelves and drawers should not be made of coniferous wood. All shelves in fruit-rooms ought to be perfectly smooth, and formed of boards, ribbed bottoms or those formed of slats causing indentations in the rind of the fruit, and ultimately decay. It is a good plan to have portable frames made to fit windows and doorways, and to cover these with $\frac{1}{2}$ -inch mesh wire netting, birds and other vermin are thus easily kept out when the doors and windows are thrown open, which is very necessary after storing has commenced. When all is made thoroughly clean and sound, leave the ventilators open, in order to keep the room cool.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to C. H. BERNERS, Esq., Woolverstone Park, Ipswich.

Tree Carnations.—The earliest plants rooted, which are now fast filling the flower-pots with roots, should be fed with manure-water if they are to be flowered in them; otherwise it will be advisable to afford them a shift into pots of a larger size, as plants root-bound at this date are almost certain to come into flower long before they are wanted. Affording water must be very carefully performed for several weeks after re-potting. Later plants may be placed in 6-inch pots. Carnation Souvenir de la Malmaison, Gloire de Nancy, and others of that strain intended for early flowering in 6-inch pots, should be layered or struck from cuttings, the latter being inserted singly in small pots, placing them under a hand-light in a cool shady position. Layering is the best and surest method of raising a large stock of plants, and in the case of plants growing in pots, they may be planted out in beds to enable the layering to be better carried out. Plants of these varieties in 8-inch pots which are well advanced in growth may be transferred into others 2 inches larger in diameter.

French and Fancy Pelargoniums.—Prune back all the plants that have been well ripened, and stand them in a frame or on their sides against a west wall till buds burst forth; they will need no water till this has occurred. When broken, the soil may be shaken from the roots, the latter cut back a little, and then the plants should be carefully and firmly repotted in a mixture of two-thirds loam, one-third leaf-mould, with a rather free use of silver-sand, affording good drainage, and pots as small as the roots can be got into without undue forcing. Keep these newly-potted plants close till it is seen root-action has taken place, then afford air by degrees, till almost free exposure is allowed. Other plants of these types, or of the decorative and show varieties going out of flower, may be stood in a warm spot out of doors to ripen, and afterwards similarly treated. Plants raised from cuttings struck early, which have had their points pinched out and that are hardened off, may be shifted into 6-inch pots, using a compost of good fibrous loam, a fair portion of rotten manure or leaf mould, with sand in quantity sufficient to keep the soil porous. Let the potting be done firmly, and, as before, keep the plants close for a week or two, and

pinch the shoots when they have made two or three leaves, in order to insure bushy, dwarf plants.

Chrysanthemums.—Plants being cultivated for the production of extra large blooms, will need regular and constant attention from this time onwards till they are housed; and as the earwig has begun to be troublesome, traps must now be set, and these examined nightly twice—just at dusk and again about ten o'clock. Bamboo canes and bean-stalks make good traps if the ends are closed with a bit of cotton wool to prevent the earwigs getting into them during the day. Shoots must be tied in, and manure-water liberally afforded, and occasionally clear soot water. Bushes that are growing freely will stand in need of staking and tying, and in doing this open out the plants in the centre. Keep a sharp outlook for aphids, dusting the points of the shoots with Tobacco-powder immediately the insects are noticed.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Dendrobium infundibulum, and its variety, Jame-sianum, are plants that sometimes fare badly under cultivation owing to the practice of growing them in too high a temperature, whereas the Odontoglossum-house is the proper place for them at this season at any rate; but towards the end of September the cool end of the intermediate-house is more suitable, the plants then completing and ripening their flowering stems. At all times the plants should be kept moist, and especially when in full growth. These two Dendrobiums have made some progress, and the growths are beginning to push forth roots from the base, and if any plant requires repotting or resurfacing with fresh material this is the best season for the operation. Owing to the need of large quantities of water, only small pots should be used, which must be well drained, only a very thin layer of peat and sphagnum-moss being employed in the proportion of two parts of the former to one of the latter, mixing all well together and potting moderately firm.

Epidendrum (Diacrium) bicornutum requires a high temperature, a moist atmosphere, and copious applications of water at the roots whilst growing; and as numerous roots soon push out from the new growths, fresh material should forthwith be afforded to those plants in need of any. Place newly-imported pieces in shallow baskets, in the usual mixture of peat and sphagnum-moss, and large pieces of charcoal, raising the plant well above the rim, and pressing the compost moderately firm about the roots and base. A pseudo-bulb here and there should be tied to the wire of the basket in order to steady the plant. E. nemorale should receive the same treatment. The needs of the majority of the Epidendrams are best afforded in the Cattle or intermediate-houses, choosing a light airy position for them. Owing to the great number of Epidendrams I cannot name more than the following species:—E. prismatocarpum, E. Randii, E. atropurpureum, E. xanthinum, E. radicans, E. crassifolium, E. Schomburgkii, E. O'Brienianum \times , E. arachnoglossum, E. Stamfordianum, E. evectum, E. sceptrum, E. Wallisii, E. hastatum atratum, and E. elegantulum \times , which may all be repotted as soon as growth begins. The material used should consist chiefly of sphagnum-moss, with a few pieces of rough fibry peat, and good drainage must always be provided. Epidendrum radicans is the most brilliant of coloured species, and when it is strongly grown the large paucies of flowers open in succession for a space of three or four months. The plant being of semi-scandent habit, should be trained to some kind of support. The plant throws out aerial roots from the stems, and frequent syringing will conduce to their abundant production, and promote healthy growth. The dwarf-growing E. Endresii—a lovely species—has small pure white flowers, with violet blotches on the lip. It dislikes being suspended near to the roof, and is best suited in a rather damp, shady, position upon the stage. The plant should be well supplied with water at all seasons. As red-spider frequently attacks the undersides of the foliage, it is advisable to take the plants down twice or thrice every week, and hold them head downwards in a pailful of tepid rainwater, carefully wiping the leaves and stems with a soft brush or sponge; for should this pest obtain a strong footing on the plant the leaves soon change colour and fall off, and the plant loses vigour. E. Endresio-Wallisii should be afforded the same kind of treatment. E. myrianthum, E. Cooperianum, E. syringothyrus, E. Frederici Guilielmi, and E. vitellinum majus all do best when subjected to cool-house treatment, a light airy position being beneficial to them at all times.

EDITORIAL NOTICE.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	AUG. 9	Royal Horticultural Society's Committee.
WEDNESDAY,	AUG. 10	Bishop's Stortford Horticultural Society's Show, at The Grange. Wiltshire Horticultural Society's Show, at Salisbury. Hastings and St. Leonard's Horticultural Society's Show.
THURSDAY,	AUG. 11	Taunton Deane Horticultural Society's Show.
FRIDAY,	AUG. 12	Alderley Edge and Wilmslow Horticultural Society's Show, at Alderley Edge (2 days).
SATURDAY,	AUG. 13	Royal Botanic Society, General Meeting.

SALES.

WEDNESDAY,	AUG. 10	Sale of the Osborn Nursery, Sunbury, Middlesex, at the Mart, Tokenhouse Yard, E.C., by Protheroe & Morris.
FRIDAY,	AUG. 12	Imported and Established Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—62° 8'.

ACTUAL TEMPERATURES:—

LONDON.—August 3 (6 P.M.): Max., 74°; Min., 58°.

PROVINCES.—August 3 (6 P.M.): Max., 84°; Bath; Min., 53°; York.

library and museum, and the Cleghorn Memorial Library followed. Some £197 was collected for the latter, expended in books, and will be found in the *Museum Catalogue*, p. 185.

No notices of motion were put by the members. A hearty vote of thanks to the president concluded the business proper of the general meeting for 1898. Colonel BAILY, however, spoke on the Forest of Dean and the working plan Report of the High Meadow Wood before him, giving a brief address on the importance of time in the growth of timber, and careful skill and culture to secure quantity and quality. We must spread results over periods of twenty-five, forty, or more years. One great merit of timber-growing is "that it also develops other industries, as brush, shoe, clog-making, &c." The smallest bits are turned to profitable use. Supplies should also be regular and constant, or these secondary interests would soon be starved out.

Reviewing the past history of some of the plantations in the Forest of Dean, they had obviously suffered from over-nursing, succeeded by its opposite of extreme thinning. The Larch as a nurse for Oaks was a mistake. The Beech is far better for preserving the strength and moisture of the soil. In fact, some doubt if the best Oak can be grown without the help of Beech. For the future some 3000 acres are to be divided into four working circles. Part under a thirty-five years' rotation, to be succeeded by a twenty-five years' rotation. We have now got beyond the period of crooked Oak for ship-building only, as some sixty years ago, and now need good, solid, straight timber for profit, such as they would, no doubt, see in the Forest of Dean.

Amid the natural disappointment at the silence of the Board of Agriculture, we need not forget that there are already numerous classes and good lecturers on forestry in the Royal Botanic Gardens, and Heriot Watt College, Edinburgh, at which sound practical and theoretical instruction is given. What is now most needed is space and fixity of tenure, to afford object-lessons for proving, testing, and finishing the results of the education given. It is thought that 1500 to 2000 acres might be acquired within easy reach of Edinburgh, partly under wood, to start with, for some £40,000, and thus convert the students into practical foresters, by enabling them to take part in all the processes of timber-growing, from the cultivation of the soil, the sowing and planting of the trees, to the thinning, pruning, felling, and selling of the timber. Considerable areas might also be devoted to the afforesting of waste, or semi-waste land, in the Highlands or elsewhere, of sufficient size to contrast forcibly with the surrounding bareness.

Several points in the controversy are now pretty well established by official and other testimony, as well as by the authority of the press. The first is the unprofitable and wasteful character of our present silvicultural methods. True, most of our adverse critics are foreigners—Frenchmen, Germans, and Danes. But Englishmen and Scotchmen, who have perfected their education in forestry in India or the Colonies, mostly agree with our foreign critics. In fact, the *Daily Scotsman*, an able critic on such matters, with a natural leaning to Scotia's side, in an able article on this subject, allows the adverse judgment to go against us by default. It could hardly do otherwise, as the facts are mostly opposed to any other conclusion; though the *Scotsman* adds, "Yet there is no doubt that if we consent to follow the silvicultural methods which have successfully stood the

test of generations of tree-crops grown across the Channel, and if we make up our minds to keep a portion, at any rate, of our woods stocked with the largest quantity of the most valuable quality of timber they are capable of producing, they will pay just as well as woods pay in France and Germany." The German professors were struck with the remarkable timber-producing qualities of our soil and climate. They attribute it to bad management that our yield of timber is so much less than what it should be, and that the quality is so inferior. So seriously inferior is home-grown timber said to be to foreign, that the use of the former is forbidden under the Land Improvement Acts. The Postmaster-General also has his Red Fir for telegraph-posts from Norway; while miners consume enormous quantities of pit-wood grown in Norway, France, and other countries, in preference to using wood produced almost at the pit's mouth, which they could obtain at half the price.

Having seen some Rannach timber, and a good deal of superb Scotch Fir and other excellent timber grown on such estates as Scone, Dupplin, &c., it is not very easy to allow such sweeping charges of inferiority to go unchallenged. Neither are such fine forests as Fontainebleau, &c., by any means of this same uniform high quality right through. Home timber has lost its market at home as much, probably, for lack of skilful sorting, cutting, and carving for builder's purposes, as for lack of quality. Our foreign trade falls into the builders' hands as a key fits the lock. The saving of labour and time on this side is enormous, and hence nearly all tradesmen prefer foreign timber. A school for the more skilful lumbering of home-grown timber might soon be established, and of course would form an important branch of any national school of forestry.

Two or three more startling facts should quicken improvements on these and other lines. Our foreign timber bill amounts to some eighteen millions a year. For the last eight years it has been rising by leaps and bounds of about two millions sterling per annum. The supplies are visibly shrinking, and cannot be sustained at their present price or volume. Running abreast of this state of things, we have in round numbers four millions of acres of waste land, and some nine million acres more yielding a mere grazing rent; while the existing woodlands are less than a million acres.

The *Scotsman* holds out little hope that any extensive acquisition of waste lands will shortly be effected by the State. Nor is this needful for the object in view. But the State might purchase and maintain a model forest as an object-lesson in economic forestry and experimental research, and a practical training-ground for students. Time, permanency, and security or continuity of tenure, are needed to command success, and these are incompatible with private ownership. Such a forest would not pay its way at first; it would or might certainly do so when in full working order. For it is well known that lands of very poor quality, quite incapable of producing a paying agricultural crop can grow coniferous timber of excellent quality, and there is no doubt that large extensions of wooded areas might be made a very safe and valuable form of investment for their owners. Such extensions would be chiefly in the Highlands, where the planting and culture of new woods would confer great benefit on the rural and resident population. The owners need showing the

State Forestry
for Scotland.

THE letter to the Right Hon. W. H. LONG, President to the Board of Agriculture, that was reprinted

in the *Gardeners' Chronicle*, July 16, is likely to prove an important step towards the establishment of a Scottish School of Forestry. Hence the general meeting of the Society announced for August 2 was looked forward to with a keener interest than usual. There were, however, several reasons for this.

Singularly enough, the very growth of the Society compelled the abandonment of the President's address, when the meeting was held at the Society's Rooms, 5, St. Andrew Square, on August 2. The meeting opened at 10 o'clock, A.M., and as some 80 members had to start early for the Forest of Dean, the business of the meeting had to be curtailed to allow them to get away in time. They would doubtless have gone south all the sooner, and with all the more pleasure, had a favourable answer to the proposed scheme for a school of forestry been forthcoming.

The award of the judges and medals were made to prize essayists: the Spring-growth of Forest-trees, by Mercury; the Planting and Propagation of Trees, by Fir-cones; the Thinning of High Forest Trees for Profit, &c. When the question of State Model Forests for Scotland arose, there was a flutter of expectation for a moment, as if a new departure in State Forestry was about to be made, but it speedily died away as the chairman, Colonel BAILY, made no sign, and the answer was ready from Mr. LONG that he had received the society's application, but added never a word as to the policy or possibility of establishing a Scottish school for forestry in Scotland at a cost of £40,000, and a working cost of £500 a year.

A few words followed on the excursion to the Forest of Dean, to which some eighty members started about twelve o'clock. It was recommended that the excursion in 1899 should assume the character of some five or six day excursions in the neighbourhood of Edinburgh, thus reserving the full strength of the society for the great Paris Exhibition, and the Woods and Forests of France in 1900. A report on the



FIG. 27.—ROSE "EDITH TURNER": PALE FLESH COLOUR. (SEE P. 105.)

way to do it by our foresters, and scientists perhaps by the State, before renewing their ancient privilege and duty of clothing their lands with profitable crops of timber. One of the most disheartening prospects of modern afforestation is the shrinkage of ancient forests, rather than rapid extension and enlargement. On many hill sides and tops traces of ancient forests may be seen, receding into sheer barrenness and sterility. Nor are the causes of such decadence of timber-growing far to seek. Foreign competition or superiority of foreign timber do not fully explain it. Two equally or more potent factors are the over-preservation of game, and the management of woods for profit on æsthetic principles. Both may be more or less desirable on most estates. But either in excess is fatal to the growth of timber for profit. Higher rents for shootings and solid returns for timber are seldom reaped together on the same property.

The West Indies.

IN a former issue we commented on the proposals made by a Commission, which visited the West India Islands with a view to ascertain their financial position, and to determine what steps should be taken to relieve the very serious difficulties under which the islands are labouring. The Commissioners had the advantage of being accompanied by Dr. MORRIS, the Assistant-Director of Kew, who has had great experience in Ceylon, Jamaica, British Honduras, and other British Colonies, and who by his counsel and experience is largely responsible for the improved condition of affairs in Jamaica. Subsequently, as Assistant-Director at Kew, he has had ample opportunity of keeping in touch with the Colonies, and with the important economic departments founded and maintained by Sir WILLIAM and Sir JOSEPH HOOKER, and their successor, Mr. THISTELTON DYER. It is therefore no matter for surprise to read in the debate on the subject in the House of Commons on Tuesday last that the Government has adopted the recommendations of the Commissioners, and proposes to appoint Dr. MORRIS with the title of Imperial Commissioner of Agriculture for the West Indies, as head of a special public department, dealing with all questions of economic botany. Dr. MORRIS' headquarters will be at Barbados.

We extract from the speech of Mr. JOSEPH CHAMBERLAIN, the Secretary of the Colonies, the following remarks, as reported in the *Times* :—

"The obstacles in the way are, in the first place, the ignorance of the population—their technical ignorance of cultivation of this special character—and the lack of communication. The fact is, that the West Indies are separated, one island from the other, and all from the great markets of the world, only being related to them by communications which at the present time are very slow, imperfect, and unsatisfactory. Where tropical produce is concerned, speedy communication is of the first importance. The recommendations of the Commission in this regard were twofold. In the first instance they suggested that a special public department should be established, dealing with all questions of economic plants and botanic stations in all the islands—we propose to adopt that suggestion—and that this establishment should be placed under the direction of Dr. MORRIS, assistant-director at Kew, who is marked out, as I think anyone who knows anything of Kew will admit, by special qualification for an important position of this kind. Not only has he all the scientific and other knowledge in the possession of the authorities at Kew, but also special acquaintance with the West Indies, and if those other industries are to be successful there is no one more

capable of doing it than Dr. MORRIS. Let me express in passing what I think is only due—my deep sense of obligation to the authorities at Kew for the assistance they have given me in regard to the West Indies and other colonies. I believe my predecessors would heartily join me in this recognition of the services at Kew. I do not think it is too much to say that at the present time there are several of our important colonies which owe whatever prosperity they possess to the knowledge and experience and assistance given by the authorities at Kew Gardens. Thousands of letters pass every year between the authorities at Kew and the colonies, and they are able to place at the services of those colonies not only the best advice and experience, but seeds and samples of economic plants capable of cultivation in the colonies."

This tribute to the value of the work at Kew and of the labours of Dr. MORRIS is, as our readers know, amply merited. Still, we cannot read it without a feeling of complacency that the labours of the great botanical department of the country have received this public recognition. It is all the more valuable, because the general public is, for the most part, profoundly ignorant of the work done, and looks on Kew as a mere pleasure-ground.

NEW ROSE "EDITH TURNER" (supplementary illustration).—At the meeting of the Royal Horticultural Society at the Drill Hall, James Street, on July 12 last, a fine new hybrid perpetual Rose under the name of Edith Turner was exhibited by Mr. CHARLES TURNER, of the Royal Nurseries, Slough. It is a pretty flower of a pale flesh colour, the outer petals changing to white as the bloom ages. The petals are rather short and round, and the general form is good (fig. 27).

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Society will be held in the Drill Hall, on Tuesday, August 9. The committees will meet at noon, and at 3 P.M. a paper on "Water Lilies" will be given by Mons. LATOUR MARLIAC.

ROYAL BOTANIC SOCIETY.—At the annual meeting to be held on August 10, 1898, motions will be moved by Mr. J. S. RUBINSTEIN :—1. That this meeting is of opinion that the management of the Society would be attended with far greater success if the following recommendations were adopted :—(a) That the present system of electing the Members of the Council, whereby they are practically elected and re-elected year after year by the Council itself be brought to an end, and that the necessary alterations be made in the bye-laws to give the Fellows a real voice in the nomination and election of the members. (b) That the scientific and administrative branches of the Society's work be divided, and that a qualified and competent manager be appointed to supervise the work of each of the branches respectively. 2. That this meeting regrets that the Council has not thought fit to carry out the recommendation made at the last annual meeting in favour of the establishment of classes for the study of botany, to be open to all students, and again urges upon the Council the expediency of establishing such classes forthwith. 3. That this meeting recommends the Council to reorganise the refreshment department, and to take the necessary steps to apply to the magistrates at their next annual meeting for a full excise-license, to be used in connection with the restaurant newly erected in the gardens. 4. That this meeting, recognising the extent to which the success of the Society is dependent on the weather, believes that prosperity can best be assured by the erection of a floral-hall of adequate size, to serve as a winter-garden, and wherein exhibitions, flower-shows, receptions, and musical promenades, can be held in all seasons, and in any weather. This meeting therefore recommends the Council to invite architects to send in plans in competition for the erection, as soon as possible, of a suitable building, the necessary outlay being met by an issue of debentures.

THE STRAWBERRY-RASPBERRY.—Sir JOSEPH HOOKER, and Mr. WORTHINGTON SMITH, the artist, both agree that the appearances presented by the Strawberry figured (fig. 23, on p. 88 of our last issue), are due to excrecence from the receptacle rather than to a fleshy development of the achene. To the opinion of such authorities we respectfully defer, the more willingly as we did not see the specimen.

NURSERY EMPLOYÉS OUTING.—Messrs. KENT & BRYDON, seedsmen, of Darlington, in order to celebrate a quarter of a century's trading, generously provided an excursion on Saturday, July 30, for their employés, numbering about fifty. The party journeyed by road to Barningham, and the weather being fine the drive was most enjoyable. A dinner was provided at the Milbank Arms, and at the close of a short toast list a move was made to the moors, returning through the grounds of Barningham Park, by kind permission of Lady Milbank. After tea the whole of the party was photographed, and the younger members indulged in various games on the cricket field.

THE LOST ORCHIDS.—In the *Chronique Orchidéenne*, n. 15, dated March, is given an account of the annoying disappearance of Mr. JULES HYE'S Orchids from the Temple Show. What the future chronicler will think of this strange proceeding we can only imperfectly appreciate, for the Temple Show was held from 25 to 27 May inclusive, two months after the (alleged) date of publication of the *Chronique*!

"FLORA CAPENSIS."—The second part of the seventh volume has just been issued by LOVELL REEVE & Co. It contains the remainder of the Cyperaceæ, by Mr. C. B. CLARKE, and the commencement of the Gramineæ, by Dr. STAFF. Of this order about a hundred genera are enumerated, the arrangement being, as explained by the editor, Mr. W. T. THISTELTON DYER, different from that in the *Genera Plantarum*, and the other colonial *Floras* published since that work. These changes have been necessitated by further accretions of knowledge.

PETER BARR is a guest of Superintendent WILLIAM FALCONER, of the Bureau of Parks. Mr. BARR has visited nearly every country on the globe. He has been twice in Spain, and his opinion of the Spanish soldiery is not a very high one. He believes that the end of the present war is near, and that it cannot be other than a great victory for the United States. He says that the disposition of the Philippine Islands will be a grave question, because of the complications which may arise. Mr. BARR is enthusiastic over the Pittsburg parks, and the Phipps conservatory. So says one of our American contemporaries.

TRADE MARK.—A recent case, decided in the Court of Appeal, raised the question whether a dealer has the right to register a trade-mark for goods which he does not sell. Messrs. JAMES CARTER & Co. applied to register a butterfly with folded wings as a trade-mark for Oats. The application was refused on the ground that the butterfly was adopted as a badge by another firm who did not deal in Oats. The Master of the Rolls gave a negative reply to the question, "Can a man properly register a trade-mark for goods in which he does not deal nor intend to deal?" The consequence is, that Messrs. CARTER & Co. are entitled to register the butterfly as a trade-mark, in spite of the fact that another firm had made prior application, but had really made no effective use of the trade-mark, because they did not deal in the particular class of article covered by the mark.

OUTING OF EXETER GARDENERS.—Recently a party numbering over fifty persons made an excursion to Bicton, by kind permission of the Hon. MARK ROLLE. The weather was fine, and the scenery of the surrounding country, with its wooded slopes, luxuriant vegetation, and ripening corn, and an occasional peep of the sea, was much admired. The park was entered by the famous Araucaria avenue, one of the finest of its kind in England. In length it

measures 500 yards, and contains fifty trees, from 30 to 40 feet in height. This avenue was planted in 1843 by the late Mr. JAMES VEITCH, the founder of the nurseries on the Topsham Road, Exeter. Some of the more interesting trees noticed by the way were the evergreen Beech, the Tulip-tree, Liriodendron, the Nettle-tree, Celtis, and several of the Japanese Conifers. Among other particularly striking objects was a tree of *Magnolia grandiflora*, which was flowering profusely.

THE SOCIETY OF AMERICAN FLORISTS has hardly acted in consonance with the rules of grammar by adding to its title "and Ornamental Horticulturists." Does this account for the numerous portraits we see in the American trade journals?

WOODLICE IN MUSHROOM BED.—We copy from the *Journal of the Pharmaceutical Society* the following method for trapping woodlice:—Your best way will probably be to trap them with long strips of brown paper bent over like a conduplicate leaf, and smeared on one side with a mixture of treacle, footsugar, and beer. They will crowd to this, when the papers can be lifted up and shaken over boiling water. Small flower-pots coated on the inside with the same mixture are also good traps.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting of the Floral Committee on July 13, 1898, First-class Certificates were awarded to Mr. C. Kwint, of Bloemendaal, for *Begonia tuberosa* fl.-pl. cristata; to Messrs. E. H. Krelage & Son, of Haarlem, for *Begonia tuberosa* fl.-pl. Orange Ball, B. t. fl.-pl. Souvenir de Pierre Notting; *Calochortus Gunnisoni*, and *Petunia "Sneeuwbal"*; to Mr. C. G. van Dijk, of Zeist, for *Schubertia grandiflora*. Certificates of Merit were granted to Messrs. E. H. Krelage & Son, of Haarlem, for *Ageratum Blue Perfection* and *Helenium Bigelowi*. Botanical Certificates were awarded to Messrs. E. H. Krelage & Son, of Haarlem, for *Calochortus obispoensis* and *Lilium elegans* Alice Wilson. H. C. Zwart, Secretary, Amsterdam.

WINCHESTER GARDENERS' ASSOCIATION.—On Tuesday last, Mr. J. C. NEWSHAM, F.R.H.S., Staff Instructor on Horticulture to the Hants County Council, delivered an able and instructive lecture on the "Cultivation of Ferns, Tropical and Temperate," the lecturer drawing special attention to the raising of Ferns from spores; and he urged his hearers to cultivate a taste for these plants. The meeting was largely attended, and a lengthy discussion followed the reading of the paper.

LADY SUFFIELD STRAWBERRY.—We have received from Mr. ALLAN, Lord SUFFIELD's gardener at Gunton Park, Norwich, a box of fruits of his new seedling sent out under the above name. It is a dark crimson, conical or wedge-shaped fruit, of an agreeably sub-acid, not particularly rich, flavour. The flesh is firm, and the seeds being prominent as well, it is a good packing variety. The season of this variety is now about over in the Norwich district, it is therefore a late mid-season fruit, and if it crops well is likely to find many admirers. We omitted to mention the fact that this variety received an Award of Merit at the last Royal Horticultural Society's meeting.

PUBLICATIONS RECEIVED.—*Annual Report on the Botanical and Afforestation Department, Hong Kong*, for 1897. The Report of Mr. Ch. Ford, the Superintendent, is encouraging, but contains no special items of news.—*Tropical Agriculturist*, July, 1898, containing various articles, notes, and extracts.—*Guides to Growers* (issued by the Department of Agriculture, Victoria), No. 36. The San José Scale; No. 40. Fruit Flies.—*Proceedings of the American Academy of Arts and Sciences*, June, 1898. Contributions from the Gray Herbarium of Harvard University, by J. M. Greenman. I. Revision of the Mexican and Central American Species of *Galium* and *Relbunium*; II. Diagnoses of New and Critical Mexican Phanerogams.—U. S. Department of Agriculture: *Preliminary Report on the Soils of Florida*,

by Milton Whitney; and *Bibliography of the more important Contributions to American Economic Entomology*, by Nathan Banks.—*Industria Agricola*, Caracas, E. E. U. U. de Venezuela. Mayo.—*Moniteur d'Horticulture*, July 25.—*Le Chrysantheme*, June.—*Bulletino della Società Botanica Italiana*, Nos. 5 and 6.—*Nuovo Giornale Botanico Italiano*, Vol. V., No. 3.

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 79 to 85.)

0, SCOTLAND, N.

CAITHNESS.—Last year being favourable for ripening the wood, such an amount of blossom in spring was rarely seen, but it got a severe check by the continued east winds. Gooseberries are an extraordinarily large crop, but every other kind of fruit is a fortnight late as compared with last year. Wm. Mackie, Dunbeath Castle Gardens, Caithness.

ELGINSHIRE.—This season is ten days later than an average season, but considering the very changeable weather, there is a fair promise of good fruit. Strawberries, Raspberries, and Black and Red Currants being very good quality. Standard Pears and Apples often deceive one at this period of the year, as it is in the later months that one can properly judge. Wm. Ogg, Duffus House Gardens.

MORAYSHIRE.—Fruit trees of all sorts showed a most abundant bloom, but the prevalent cold winds and frosty nights in the month of May, a great number failed to set a crop of fruit. The Codlins had the best crop among Apples; while Victoria, Mitchelson's and Coe's Golden Drop are best amongst Plums. Apricots and Peaches are as heavy a crop as we have had for some years, but all sorts of fruit-trees are much in need of rain, and a few sorts are casting the fruits for lack of moisture in the soil. Chas. Webster, Gordon Castle Gardens, Fochabers.

ROSS-SHIRE.—The Apple-crop in this district is an excellent one, though quite a fortnight later than usual, owing to the cold and backward season. Pears very poor in most cases, owing to precocious flowering on account of an open winter and spring. My remarks on Peaches and Nectarines apply to inside trees; very few are grown outside, even in favourable localities. Apricots are a thin crop. Insect pests have been very troublesome on fruit-trees, notably green-fly on Plums, grub on Apples, and the moth on Pears. The Gooseberry-caterpillars have not been numerous this season. W. Minty, Ardross Castle Gardens, Atness.

SUTHERLANDSHIRE.—Fruit trees generally had a fine show of bloom. The earlier flowering varieties of Apples, Pears, and Plums got spoiled with inclement weather and frosty nights about the middle of the month of May; but the later blooms set well, and there is a fair average crop of Apples, though some trees have but few fruits, and others are well laden. Aphides have been very prevalent. D. Melville, Dunrobin Castle Gardens, Golspie.

1, SCOTLAND, E.

ABERDEENSHIRE.—Apple and Pear-trees had an unusually abundant blossom, but owing to a continued east wind and cold rain when in flower, they did not set well, and are a very poor crop, excepting a few trees on the walls. Plums have done better, and are a fair crop. Cherries are also poor, except Morellos, which have a fair crop. John Forrest, Haddo House Gardens, Aberdeen.

—The Apple crop on the whole, considering the backward, cold spring, is a good average one. The prevailing spring weather had a disastrous effect on all kinds of fruit-trees and bushes, and rendered growth slow and weak, and this was made worse by the prevalence of insects. J. Brown, Delgaty Castle Gardens, Turriff.

BANFFSHIRE.—The outside fruit-trees had a very trying season, for from the first week in February the weather was cold, with biting winds. Blossom of all kinds was most abundant, and promised well, but the frosts in May, and the cold winds, proved very

destructive to the Plums, Pears, and Apples, both on standard trees and on walls, and aphides are very troublesome. The foliage of earlier-flowering wall-trees, even where protected, has suffered very badly, the Peaches especially. Strange to say, my Fig-trees trained on the open wall are better than usual. Strawberry Royal Sovereign is proving a great success. J. Fraser Smith, Cullen Gardens.

BERWICKSHIRE.—The weather during the time the fruit-trees were in blossom and setting was cold and sunless, hence the fruit did not swell, though there was a great promise. Trees bearing Apples, such as Manx Codlin, Ecklinville Seedling, Stirling Castle, &c., have set very thickly; the fruits are swelling capitally. The best new Apple that we have here is Newton Wonder, which is a good all-round culinary variety. Among Pears, Doyenné du Comice is still our best as regards cropping and quality. The Czar Plum I find a useful early one; it sets freely, and is otherwise desirable. The Gooseberry crop is enormous, as likewise red Currants. Rain is very much required in this part to develop the various fruits. J. Cairns, The Hirsell Gardens, Coldstream.

EAST LOTHIAN.—With the exception of Pears, all kinds of fruit blossomed abundantly. The weather during most of the flowering period was sunless and cold; I think one genial day was all the good-setting weather we experienced here. Late frosts were also harmful, but, as usual, their effects were not generally bad; Gooseberries and Strawberries, however, were badly damaged in some places. Early fruit has come on with great rapidity, and I cannot say I have ever seen Apricots and Plums larger and finer at this date. Aphids and fungus on the foliage has been troublesome. R. P. Brotherston, Tynninghame House Gardens, Prestonkirk.

FIFESHIRE.—The small-fruit crop in this district, as well as that on bush Plums and Pears, suffered very much from frosty nights in the middle of the month of May. The Apple-trees, excepting partially the earliest varieties, were not in bloom, consequently they escaped much damage, and promise a good crop. Red and Black Currants, as well as Gooseberries, were severely thinned by a frost of 6° in the middle of May. The frost experienced was very irregular, in some places there being scarcely any, while in places not far distant 10° were registered, doing, of course, all the more damage. At one time the season promised to be an early one, but owing to the cold nights in May and June the ripening of the various fruits will be normal. W. Williamson, Tarvit Gardens, Cupar.

FORFARSHIRE.—The fruit crop in the gardens here is quite up to the average, with the exception of Pears, which are almost a failure. There was a splendid appearance of blossom, and apparently the weather at the time was favourable, still very few fruits have set. The Apple crop is generally over the average, and a good many trees require to be thinned in order to secure fruits of a useful size. Strawberry Royal Sovereign has done well on young plants; but plants fruiting for the second time are not good. Growth has been very slow this season, and everything is later than usual. The summer has been very dry so far. W. McDowall, Brechin Castle Gardens.

MIDLOTHIAN.—Since the end of August, 1897, the weather has been, on the whole, comparatively mild, and unusually dry; the rainfall here for the ten months ending June 30, being only 7.45 inches, and for the whole year, ending on the same date, 11.98 inches, or about half an inch over the average annual rainfall. The result was well-ripened wood and buds, and the display of blossom on the fruit-trees in spring was profuse and extra fine. The spring months were generally dull and cool, with nips of frost at night, bright sunny days being rare, so that the "set" of fruit, especially on damp soils and in cold places, was not at all commensurate with the abundance of the blossom. Wall-fruit, as might be expected, set well, and Apricots, Peaches, Nectarines, and Cherries, are extra fine crops, requiring to be severely thinned. Cherries are the finest crop seen around here for many years, but the Morello is the

ception, bearing only a moderate crop. Among Dessert Cherries, Rivers' Early and Frogmore Early are very fine; but almost all the popular varieties are loaded with fruit. It is the same with Apricots, Hemskirk, and others of the Moorpark type, Early Oullin's and others of the Peach-picot type, and Pineapple being the best. Only early varieties of Peaches are, as a rule, worth their room on a wall in Scotland, but all varieties have fine crops, and mid-season ones—Bellegarde, Stirling Castle, Condor, Noblesse, and the like—will probably open well, although only early varieties can be trusted to ripen every season, among which Alexander, Early York, Early Rivers, Hale's, and Waterloo, are the most certain, and the two last are probably the best. Among Nectarines Pineapple seldom fails, and Lord Napier is a close second, but not so free-bearing or so rich in flavour. Elruge, Violette Hative, and Humoldt, are good; and the newer varieties, Early Rivers, Goldoni, and Cardinal, are promising additions to the Nectarines. Apples, Pears, and Plums, are a good all-round average crop; but some of the most regular bearers of each, for instance—the Codons among Apples, Hesse among Pears, and Victoria among Plums, are a thin crop, or none on many trees, while varieties with a bad reputation for bearing qualities are laden with fruit. With the exceptions referred to, it is still, however, the well-known popular varieties that are bearing the best crops of fine, clean, useful fruits. Small fruits are abundant, Currants and Raspberries being extra fine, Gooseberries and Strawberries a good average, the drought being against the swelling of the Strawberry crop, where artificial watering cannot be applied. Trees generally are free from insect pests, and have made a fine growth. Plums and Gooseberries are the exception, as they suffered badly in June from aphids. Crops are ten days late at present, and will require a warm autumn to bring the later varieties to full maturity. *M. Dunn, The Palace Gardens, Dalkeith.*

— The Apple is the crop of the year, whilst Pears, on the whole, are a thin crop, alike on walls, standard trees, bushes, and pyramids; a few very old common varieties, however, seldom fail to set a crop of fruit. Plums dropped many of the flower-buds, and trees that did not suffer in this way carry a fair crop. Golden Drop is the best Plum of this district on walls. The Morello Cherry is mostly a good crop. Strawberries are ripening three weeks later than last year. *D. T. Fish, Edinburgh.*

PERTSHIRE.—The fruit crops here are fairly satisfactory. Apples are abundant, and the quality promises to be good. There is a fair sprinkling of Plums on the open wall, but standard trees have failed. Peaches carry an average crop, and the trees are clean and in good health. All fruits are much later than usual. *A. Mackinnon, Dunblane Palace Gardens.*

WEST LOTHIAN.—After the very abundant supply of fine healthy blossoms on nearly all varieties of the Apple, the prospect of a good fruit year in this neighbourhood has been blasted. Among Apples the best-cropped varieties are Lord Grosvenor, Lord Suffield, Stirling Castle, and Cox's Pomona. The Pear crop on walls is a very good one. Damsons have a poor crop. *James Smith, Hopetoun Gardens, South Queensferry.*

6. SCOTLAND, W.

ARGYLLSHIRE.—There was a great abundance of bloom on fruit trees, particularly on Apples and Sweet Cherries. Of Apples Cox's Orange Pippin, King Pippin, Worcester Pearmain, Ecklinville, Lord Grosvenor, and Bramley's Seedling are heavily cropped. Amongst Pears the best are Madame Treyve, Beurré d'Amanlis, Louise Bonne of Jersey, and Marie Louise; others are thinner, but mostly they have a fair sprinkling. Plums on walls are a good crop. Damsons in orchards are a complete failure, partly owing to bullfinches. Morello and sweet Cherries are abundant. Black Currants are better this year than I have ever seen them here. *D. S. Milville, Poltalloch Gardens, Lochgilphead.*

DUMFRIESSHIRE.—Apples and Pears are a very short crop. We had a prospect of a full crop well

into the month of May, but after a few successive nights of frost, the embryo-fruits dropped wholesale. Early Strawberry blossoms were much crippled by frost; and the drought we have experienced of late in the Nith Valley has proved sufficiently trying to cause a considerable deficiency in the crop. The Currant crop is a grand one, and Superlative Raspberry is our best cropper by far. *David Inglis, Drumlanrig Castle Gardens, Thornhill.*

— The fruit crops in this district are, on the whole, fairly satisfactory this year. The varieties of culinary Apples that are bearing the best crops are Duchess of Oldenburgh, Lord Suffield, Keswick Codlin, Pott's Seedling, Ecklinville, Cellini, Hawthornden, Stirling Castle, Warner's King, Golden Noble, Blenheim Orange Pippin, Tower of Glamis, Peasgood's Nonsuch, Golden Spire, Lane's Prince Albert, Alfriston, and Northern Greening. Dessert Apples are rather under the average, but the trees, and what fruits there are, look in a healthy condition. The varieties with anything like a crop on the trees are Irish Peach, W. E. Gladstone, Devonshire Quarrenden, Worcester Pearmain, Oslin, Kerry, Cox's Orange, Sturmer, King, and Ribston Pippins, Scarlet Nonpareil, and James Grieve, an Apple of Scotch origin worthy to be recommended. Pears generally are an average crop, although some of the more tender dessert varieties are not up to their usual yield in this district. Plums are decidedly the best crop we have had for years, and are likely to afford very remunerative returns; but Peaches, Nectarines, and Apricots are not up to their usual standard out-of-doors. Small fruits, including Strawberries, are in great quantity, and the weather here for the past two weeks has been for ripening them in fine condition. In this immediate vicinity we did not suffer so much from sharp late spring frosts, but early crops and fruits generally were retarded in their early stages of growth, and were considerably damaged by lack of sunshine, excessive rains, and a low, damp, fluctuating temperature. *John Mackinnon, Terregles Gardens, Dumfries.*

STIRLINGSHIRE.—The various fruit crops are good generally. The promise of a crop at flowering-time was better than usual, but the cold nights throughout the month of May, and the frosts that occurred in June, thinned all crops—but not too severely—excepting Pears, Black Currants, and Sweet Cherries, which are scarce, while Morellos are plentiful. Strawberries suffered in June somewhat, but the crop is a fair one, and of good quality. Apples are plentiful, especially those which never fall, viz., Stirling Castle, Golden Spire, King of Pippins, Seaton House, Codlins of sorts, Sandringham, and Lord Grosvenor. *M. Temple, Carron House Gardens, Falkirk.*

WIGTONSHIRE.—The fruit crops in this district vary considerably this season. Strawberries are probably the lightest crop experienced for some years, and midseason and late varieties are less satisfactory in this respect than the early ones. The crops of Apples and Pears will require to be very little thinned. The Plum crop, whilst below the average, is pretty evenly distributed over the several varieties grown. Peaches and Nectarines are almost a failure, the trees having suffered very much from the cold weather in the spring. *J. Day, Galloway House Gardens, Garliestown.*

2. ENGLAND, N.E.

DURHAM.—Owing to the east wind and sea-fogs in the month of June, Apple, Pear, Plum, and Cherry trees were blighted to a degree that I have never seen exceeded during the last forty-five years, and to increase the seriousness of the matter, the foliage is in part eaten by caterpillars. Owing to the dry weather that has occurred for the last few years at this date, Raspberry-canes do not grow, and do not promise well for next year's crop. *R. Draper, Seaham Hall Gardens.*

NORTHUMBERLAND.—The Apple crop in this district will be light, but in this garden we have a promise of a good crop on many varieties. Only Pear-trees on the walls have fairly good crops, namely, the varieties Jargonelle, Louise Bonne of Jersey,

Doyenné du Comice, Emile d'Heyst, Hacon's Incomparable. That fine Pear Marie Louise failed to set any fruits. Victoria, Jefferson, Golden Gage have good crops. Aphides infested the trees severely. Apricots are a very good crop. The lack of rain is being severely felt in this district. Strawberry Royal Sovereign is extra fine this year, and Queen of Denmark promises to be very fine. *G. Harris, The Castle Gardens, Alnwick.*

— Hereabouts, after a very good promise in the early spring, the results are somewhat disappointing, the Apple-crop in particular being non-existent on many of the older trees. Pears on the walls are a good crop, but on pyramids there are none. Strawberries are a light crop; but the season will be short, the weather being dry. *George H. Ackroyd, Howick Hall Gardens, Lesbury.*

(To be continued.)

HOME CORRESPONDENCE.

THE ROUNCIVAL PEA.—Your remarks in the issue of July 23 respecting Rouncival Pea, do not carry the history of this Pea very far back. I enclose you a list of Peas and Beans from an old seed catalogue published in 1688—the oldest I have seen—and you will notice it contains five sorts of Rouncival Peas. I also enclose you an extract from an old gardening book of the same date. This maintains that Hotspur Pea, sown early, is ready for gathering in May (old style). This is as early as any of our first early Peas now, showing how little advance in the matter of earliness we have made. Our improvements in this respect merely maintain ground already taken up. Were not Rouncival Peas similar to our tall, wrinkled marrows? *Jno. C. Gould (Messrs. Sharpe and Co. Limited), Sleaford.*

A C A T A L O G U E OF SEEDS, PLANTS, &c.,

Sold by Edward Fuller, at the Three Crowns and Naked Boy, at Strandbridge near the May Pole, Theophilus Stacey, at the Rose and Crown without Bishop gate, and Charles Blackwell, at the King's Head near Fetter-Lane-end in Holborn, London, 1688.

SORTS OF PEASE, BEANS, &c.

Barns' Hotspur Pease	White Rose Pease
Short Hotspur Pease	Grey Rose Pease
Sandwich Pease	Egg Pease
Grey Rouncival Pease	Wing Pease
White Rouncival Pease	Sickle Pease
Blew Rouncival Pease	Windrow Beans
Green Rouncival Pease	Sandwich Beans
Maple Rouncival Pease	White Kidney Beans
Large White Sugar Pease	Speckled Kidney Beans
Small White Sugar Pease	Canterbury Kidney Beans
Grey Sugar Pease	Lentils

"SYSTEMA HORTICULTURÆ, OR THE ART OF GARDENING, 1688.
Of Pease.

Pease are of divers kinds, and some of them the sweetest and most pleasant of all Pulses; the meaner sort of them have been long acquainted with our English air and soil; but the sweet and delicate sorts of them have been introduced into our gardens only in this latter age.

There are divers sorts of Pease now propagated in England, as three several sorts of Hotspurs, the long, the short, and Barns' Hotspur, Sandwich, five sorts of Rouncivals, the Grey, White, Blew, Green, and Maple Rouncival. Three sorts of Sugar Pease, the large white, small White, and Grey Sugar Pease. The Egg-Pease, Wing-Pease, and Sickle Pease; whereof the Hotspurs are the most early, pleasant and profitable of all others. The Sugar Pease with crooked Cods, the sweetest of all. The large white and green Rouncival and the great Egg Pease we shall more particularly advise to be propagated in our Gardens.

The Hot-spurs are the speediest of growth of any, that being sown about the middle of May will in six weeks' time return ripe again into your hands, no vegetable besides being so quick in its growth and maturity; therefore let these be the first that you sow; if sown in February or March they will come earlier than any other sort sown before winter; but if you sow them in September, and can by Fences of Reed, or otherwise, defend them from extremity Frosts, you may have ripe Peascods in May following.

The large Sugar Pease (which many take to be a fair white sweet Pease succeeding the Hot-spur, but erroneously) is a tender Pease planted in April, and ripe after midsummer, the cods are very crooked and ill shaped, which being boy'd with the unripe Pease in them, are extraordinary sweet. The greatest discouragement in raising these, is that their sweetness attracts the small birds unto them, to their total destruction, unless carefully prevented; which is a sufficient argument of their pre-excellency.

The large white and green Rouncivals, or Hastings, are tender, and not to be set till the cold is over, and then not very thick, for they spread much and mount high, and therefore require the aid of tall sticks, every one knows the worth of them.

There is another very large grey but extraordinary sweet Pease, that is largely propagated, it is tender but very fruitful, and deserves a large bed in your kitchen garden.

They delight in a warm light soil; if it be rich the Pease are the fairer, if lean the Pease are the more early and spend better, especially when dry.

They are set with a Dibble to more advantage than sown in Rills or Furrows, but either way should be by a line, and the rows eighteen inches or two foot apart, as the ground is in goodness, that you may go between them to hoe, weed or gather them.

If you keep the ground between them bare, they will ripen the sooner, for the heat of the ground will contribute much thereto.

If you raise the Earth about them when they are a hand-breadth high, they will flourish the better.

If you set or sow them in the beginning of or before Winter you must inter twice as many Pease as you need to do in case you stay till February or March, because the Cold and the Mice will destroy a part.

Ground laid in deep Furrows from East to West and Pease sown or set on the South declining side of each furrow, will defend your Peas better in the winter than if they were sown or set on a level. For on the Wiltshire Plains the husbandmen leave their land after it is sown with Wheat as rough and clotty as they can, to shelter their Corn in grass from the severity of the cold winds in the winter.

Peas on sticks will bear more, but on the ground will ripen sooner."

STRAWBERRY MONARCH.—I would ask if the blindness of this variety is characteristic, or if it is due to the vagaries of the present season? Last year a bed of this variety was almost a failure in this garden, although blooms were an abundance. The bed consisted of young plants, and I felt considerable disappointment. I thought the plants grew too strongly; however, I planted a few runners out of pots last autumn, and both these and the plants which were blind last season have cropped heavily this year. It is a fruit with a firm pulp and good flavour, but our fruits were not quite so large as they are said to come in some soils. The best variety to fruit with me the first season is Laxton's Leader, which grows of an enormous size, and is of good flavour. The shape of the fruit varies somewhat, but the shape is generally good, and I know of no other Strawberry that is its equal for cropping the first year after planting. It is admirable as a forcer to follow Royal Sovereign, and makes but little leaf-growth. I find the best crops are obtained by planting the forced plants out, and letting them stand for two years. We force Royal Sovereign, Leader, Monarch, and Anguste Nicaise. I shall discard Monarch for forcing, and increase the number of Leader. Royal Sovereign, from runners planted outside, makes much leaf and little fruit the first season, but forced plants planted outside bear marvellous crops of fruit. The soil at Poltimore is heavy, and the subsoil moist. *J. H. Slade, Poltimore Gardens, Exeter.*

— In reference to remarks on page 73, the inference that the kind is dæcious will not hold good, as ours are surrounded on all sides by other varieties; but in our case they did not throw any flower stems, while, on the other hand, cutting out the blossom in the first year can scarcely cause them to go blind, as it distinctly strengthens the crowns for the following season. I should be more inclined to attribute it to the extreme dry seasons of 1896 and 1897. I learn from one grower he had some acres that on light land were a sheet of blossom, and on heavier land a portion only went blind. At Chiswick the flowers were not taken off the first year, and yet 80 per cent. were blind and threw no flower stalks. It evidently varies considerably in various soils, and in this respect is not alone. For instance, nothing could be finer than the Gunton Park shown by Mr. Divers, from Belvoir Castle garden, but with us it is a failure. One year we never picked a berry from it. *Geo. Bunyard.*

BLINDNESS IN STRAWBERRY PLANTS.—Not having had an opportunity to read my *Gardeners' Chronicle* of the 23rd ult. until some days after date, I had not seen the editorial note upon the blindness of my Strawberry plants Monarch. I find I am misunderstood, probably from not stating my meaning of the word more clearly. What I meant by "blindness" in my plants was, every plant failed to produce flowers. It is a term I have heard used all my life in reference to Strawberries, and particularly to plants grown in pots that do not produce flowers in the forcing season. *H. Fisher, Flixton Hall Gardens, Bungay.*

LOW TEMPERATURE.—During the night, July 28th, the temperature here fell to 33°; by the sides of a stream the grass was coated with hoar-frost. On July 29th the thermometer registered 34°. *Thos. Coomber, The Hendre Gardens, Monmouth.*

GROWTH OF ACACIA MOLLISSIMA IN CALIFORNIA.—A spontaneous seedling of this tree sprang up in our botanic garden in the summer of 1895, from scattered leaf-mould. Not being in the way of

other plants at the time, it was allowed to remain till June 29, 1898, when it was taken down for analysis of the bark for tannin. It had received no special care or cultivation, and no manure or irrigation, yet in the space of three years it had attained a height of 31 feet, with a spread of 24 feet at 6 feet from the ground. The trunk was 6 inches in diameter at 8 inches from the ground, and showed three clear annual growth rings. It flowered sparingly for the first time in the spring of this year. *J. Burt Davy, University of California, Berkeley, California U.S.A.*

THE BUNCH PEA.—I saw this growing in a Surrey garden recently. It was in a clump, and sown to produce a decorative effect, because the white and red hues of the flowers, and their clustered form, made them so pretty. It is generally assumed that the stems are fasciated. That is not so. They are round, hollow, and of quite natural form; the plant doubtless being a distinct variety from *arvense*. Of course, as a decorative plant it is a long way below even an inferior Sweet Pea; but were the flowers intercrossed with pollen from a Sweet Pea, possibly some hybrids of very interesting form might be obtained. No doubt it is the *Lathyrus umbellatus* referred to by Mr. Sherwood the other day, and there can be no doubt, as he showed, that it is exceedingly ancient. How it became associated with the mummy legend is a subject that should have attraction for leisured scientists. *D.*

A MISQUOTATION OF BUTLER'S "HUDIBRAS."—Allow me to correct "Experience's" curious misquotation of Butler in his notes upon "Market Gardening" in the last issue of the *Gardener's Chronicle*. If he will turn to Butler's "Hudibras," page 310, Part III., Canto III., he will find a jingle containing sense. It is as follows:—

"He that complies against his will,
Is of the same opinion still;
Which he may adhere to, yet disown,
For reasons to himself best known."

J. McDonald, Mongewell Park Gardens, Wallingford.

CAMPANULA MIRABILIS.—I am sending by separate post a photograph of *Campanula mirabilis*. The plant is the same from which your illustration of July 9 was made, but in a more developed condition. At the present time it has 120 flowers fully out, and as they last at least a fortnight in good condition, I think a great future is in store for this species. Its freedom of flowering is so profuse that I notice new buds are forming in the axils of the old flower-stems, which will make it almost perpetual flowering. *E. Scaplehorn, Woking.*

EARLY DWARF CAULIFLOWERS.—Having had very much to do with the introduction into commerce of that beautiful early Cauliflower Snowball, more than twenty years ago, I respectfully ask to be informed in what respect the variety named Snowflake, mentioned at p. 70, differs from it. I have seen numerous dwarf early Cauliflowers under diverse names during intervening years, but all are Snowball, and the very best and earliest, whitest and dwarfest, are still Snowball. I had so wide an experience of it because I used always to grow it for seed, and sowed my own seed only. I invariably sowed in a cold house in the middle of January, and had beautiful solid white heads ready to cut the first week in June, on an outside border, the heads being from 6 to 8 inches across, and snow-white. That is relatively as early as sowing in February in warmth. I cannot at all understand why every seedsman should want a new name. Gardeners who know no better, of course think the variety is new. *A. D.*

POTENTILLA THURBERI.—A plant has flowered in my garden for at least ten years, though I have no idea where it came to me from. It has been returned to me more than once by hasty namers of plants as *P. atrosanguinea*. I cannot be surprised that those who make it part of their duty to name plants for nothing, have not leisure to give them more than a passing glance, and if I send them anything rare, I am seldom surprised if I get a name which I know to be wrong, even if I do not know what is right. I formerly paid a fee of 1s. a plant, and sent the fee and the plant together to someone who would verify the name from an authenticated specimen in a first-class herbarium. I shall be glad to renew that practice if I knew where to send the plants, but after I had made several fruitless attempts to identify this *Potentilla*, the Director of Kew kindly got it named for me as *P. Thurberi* (*A. Gray*), native of North Mexico. I send these particulars

because the plant ripens seed freely. The seed comes up abundantly, and I have distributed it to many gardens as a good hardy plant without a name. It is from 1 foot to 18 inches high, making many self-supporting stalks. The leaves have five to seven pinnae, very silvery beneath; it flowers freely in July and August, the flowers being of a very deep brown-red, without any suspicion of purple taint, which cannot be said of those of *P. atrosanguinea*. A sowing two springs ago produced at least 500 seedlings, the residue of which I presented to Mr. J. Wood, of Kirkstall, for distribution. *C. Wolley Dod, Edge Hall, Malpas.*

NURSERY NOTES.

EDENSIDE, GREAT BOOKHAM.

LOVERS of Carnations will, if they journey to Bookham, Surrey, find in the several long span-houses at Edenside that Mr. Jas. Douglas has provided a floral feast indeed for their delectation. Mr. Douglas is, as all the world knows, a true florist. He does not grow his myriad varieties of Carnations in borders outdoors, because his object is not garden decoration, but rather the presenting of the flowers in the finest and most perfect condition on the exhibition table, at the same time illustrating the remarkable value of these plants for pot-culture under glass. It is probably true that there is not a finer collection of all sections of the Carnation in the kingdom. Probably in all the houses there are not less than 10,000 pots, and as each pot, 8 or 9 inch, contains two or three plants, the number is greatly increased. The new show-house, 100 feet by 21½ feet, is crammed full of plants, all in the finest possible condition, with a carefully-estimated 3000 pots, and other houses are just as full. A large number of seedlings are blooming out in the open ground, and of these only anything that is very fine is selected. Fine, indeed, must be the seedling that can excel the best-named varieties, yet new ones are constantly coming to the front.

Those who may think they have something in the way of seedlings of special excellence should see the Edenside collection ere they assume that they possess superior novelties. Very material strength to Mr. Douglas's collection is furnished by the possession of the stocks of all that famous raiser, Mr. Martin Smith, has produced. That distinguished amateur has done much to revolutionise the Carnation, and Mr. Douglas has also done a great deal in the same direction. It looks now as if the newer and finer flowers, though of far less precise flaked or bizarre, would overthrow in public estimation the old show varieties, although these have numerous admirers. The great development in Carnations has been chiefly amongst the huge-flowered Malmaisons, beloved by millionaires, the lovely yellow-ground Picotees, and the very beautiful and varied selfs. All these, but the two latter sections especially, have the particular merit of giving marked distinctness—points not so observable with many of the flakes and bizarres of the florist, and for this reason the former find more favour with the pure flower-lovers. However, Mr. Douglas grows varieties for everybody; and any intending grower should first see what is in bloom, and make a selection under the most favourable conditions, rather than from mere description. Carnations generally are late this year. At the time of our visit (July 19), the plants wanted on the whole fully ten days to get them into perfect bloom. That fact shows how desirable it was that the National Carnation Society's Exhibition should be held at a later date than was originally fixed upon. A marked feature of many of the new varieties—and it is one Mr. Douglas points out with great satisfaction—is the rarity of pod or calyx-splitting, which has marred the beauty of so many fine flowers in the past. Some day we hope no variety will be put into commerce that splits its pods; nay, we even hope the time will come when the National Society will rigidly exclude from its exhibitions all burst flowers. The rage for huge Cabbage-rose-like Carnations has done much to make pod-bursting common. The

true florist should rise up in arms against this evil, and fight it to the death.

Special enquiry into the Edenside Carnation compost reveals two interesting facts—the first is, that the much-distrusted moss-litter manure is largely employed; the second is, that no description of artificial manure is used. There are, therefore, no booms for all sorts of questionable compounds to be got out of the Carnation in the same way that they are obtained through the Chrysanthemum. Growers who are but amateurs, will please note that the compost which produces at Edenside such splendid results, consists exclusively of a stiff turfy loam two-thirds, and one-third of moss-litter manure. This compost is made by building up a stack in the autumn, and another in the spring of thick layers of turf, and thinner ones of the manure to about 5 feet in height then the whole well heats and quite destroys all insect or fungoid life. When chopped down and put on the stage, a proportion of one-sixth or so of old mortar run through a sieve is mixed with it. Sometimes, but not regularly, a little soot is added. It will thus be seen that no quack composts are favoured. In the matter of propagation, all the numerous fine Malmaisons have sometime been layered, and the earlier ones of other sections are being proceeded with. Probably some 60,000 layers have to be put down, possibly many more. This work will go on during August, even into September. Some varieties make their shoots rather high up, and these have to be propagated by cuttings, or by turning the plants out into the open ground, planting them obliquely, and then layering the shoots. In respect of propagation, varieties differ materially, some giving plenty of grass, others little, each one therefore has to be treated according to its habit.

Generally, Carnations here may be divided into three sections: the Malmaisons, with their broad fleshy foliage, and huge but rich high-class flowers; the tree, that are more generally adopted for winter use, but are here induced to bloom in the summer for seed-production; and the ordinary section, which includes everything else pretty well.

Malmaison Carnations.—Besides the blue, pink, and scarlet forms so widely grown, there are that superb Scarlet Churchwarden, a brilliant scarlet; Prime Minister, richly perfumed, an even richer scarlet; Trumpeter, very fine; Lady Grimston, ground flesh white, then heavily flaked and speckled bright red, very free-flowered and sweet-scented. A very pure white one is Nell Gwynne, which everybody will want to have, as it is the first pure white Malmaison raised. Mrs. Everard Hambro and Lord Rosebery are other fine varieties.

Tree Carnations.—Entirely of his own raising, Mr. Douglas has a fine batch of novelties in this section that will be valuable additions to our present winter bloomers. The flowers are of the best form and good substance, but rather larger than has usually been found amongst trees; Alfred Grey, primrose, flaked pale rose, is a lovely flower; Cornus is pure white, wonderfully free, a charming button-hole flower; Julian, rich crimson-scarlet, wonderfully free; Sylvanus, bright purple, one of the first of that colour in the section; Regalia, a lovely soft rosy-carmine, also very free; Patrocles, rich scarlet; and some others. These varieties, so far as they have been fertilised, are seeding well.

Yellow-ground Picotees are taking very high rank both as pot and exhibition flowers; they have exceeding beauty, as well as good size and substance. The yellow ground, with the informal Picotee edging, presents attractive features that all Carnation lovers appreciate. Of this section, a few we saw in fine bloom were Mohican, rosy-red margin, very fine; Dr. Vish, edged rosy-lilac, very distinct; Wanderer, edged fine rosy-red; Mr. Nigel, having a heavy crimson edge; Mrs. Tremayne, heavily edged and flushed fiery red, a very striking flower; His Excellency, primrose, thin rose-edge; Voltaire, Miss Violet, Harlequin, and Badminton also are each very beautiful.

General Collection.—Of this, the rich and beautiful selfs seem to have the most attractive forms. Many are large, full, indeed superb flowers, Frances

Wellesley, red, shaded rose; Mrs. Jas. Douglas, rich rosy-carmine; Sir Henry Irving, velvety crimson; Hampden, salmon-buff, greatly superior to Mrs. Reynolds Hole; Diana, lemon-yellow; The Druid, bluish-mauve, a quaint colour; Nautch Girl is a lovely blush-white, with fine shell petals; B. ndigo is distinct blue, shaded purple, a very novel and striking colour; The Cadi is a lovely scarlet, of fine form; Elfin, a fine pure white; Zoe, a charming rosy-lilac; and Artemis is bluish, heavily flaked scarlet, a striking fancy. These are, however, but a few out of the many in this superb collection. Seeing what Carnations now are, we may well wonder what they will be like some ten years hence, for the progress made during the past decade has been surprising. The Carnation fancier can now have his fill of this beautiful summer flower.

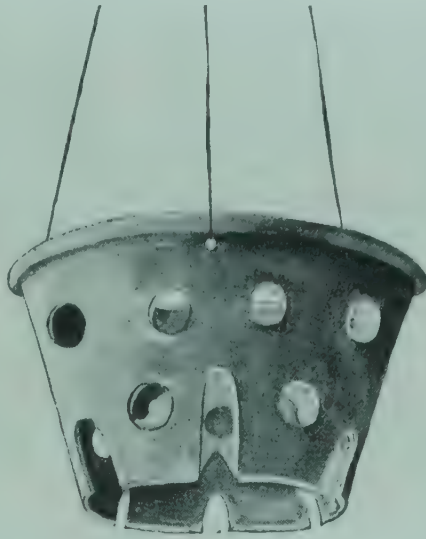


FIG. 28.—SANDER'S ORCHID-PAN: SHOWING PAN IN HANGING POSITION.

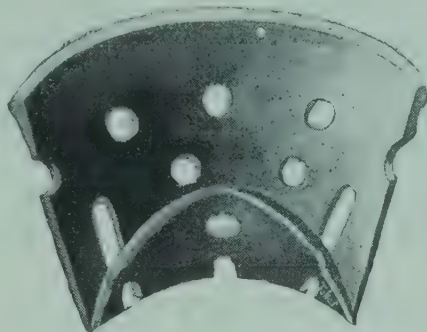


FIG. 29.—SANDER'S ORCHID-PAN: SECTION.

NEW INVENTION.

SANDER'S PERFECT ORCHID-PAN.

It might be supposed that to make anything new in Orchid-pots and pans was an impossibility; but Messrs. Sander & Co., nurserymen, of St. Albans, Herts, have introduced to our notice a novelty which seems to possess improvements in a variety of directions. As will be seen by the illustrations (figs. 28, 29), stagnation of water is not possible, and the raised interior with the numerous openings, secures air for the roots of the plants, besides rendering the pan lighter by the lesser number of crocks required. The roots have a safe place in the dome in which to develop, and they ramify freely from the fact of exterior and interior surfaces being well adapted for their growth and protection. The pan is convenient, durable and simple, and it is nearly as cheap as the ordinary ware, and much cheaper than wooden baskets.

FLORISTS' FLOWERS.

CARNATIONS IN THE OPEN BORDER.

ONCE again are the grateful border Carnations in blossom, and the beautiful tints of colour, and the characteristic habit of each is not the less interesting than attractive. But this season these Carnations are not quite so satisfactory as they have usually been, and this I attribute chiefly to the exceptionally mild winter of 1897-98, and in a lesser degree to the very cold ungenial weather during spring and early summer. Our system of cultivation is that of potting up the plants in layers in autumn, and planting them into their flowering quarters in spring. I never planted out finer, better rooted, plants than this year, but the results as compared with those of past seasons, are disappointing.

This is more apparent in the "grass" than in the quality of the flowers, it being weak and lacking that glaucous tint that accompanies rude health, and is so desired by the cultivator. This defect is noticeable, too, in the weaker growing varieties, and in these older types, the same stock of which has been propagated for several years in these gardens. This suggests that it may be advisable to grow some of the weaker varieties in pots, and with glass protection, but such a practice is not likely to become general in private establishments, and is a system which I am afraid would never receive general support from private growers; unless the flowers are desired for exhibition purposes, owing to the necessary glass accommodation being required in other ways. It must not be inferred that I object to such a system, but I would prefer to see a selection of the stronger habited varieties grouped together in a garden border, than have to go under glass in July to inspect varieties which, owing to their delicate constitution, are unsatisfactory out-of-doors, and consequently less valuable.

I will now add a list of those varieties which have grown well under adverse circumstances, and may therefore be recommended as strong-growing border Carnations that will really succeed under border treatment. Raby Castle, Countess, Duke of Orleans, Duchess of York, James Douglas, Evelyn, Corunna, Brigadier, Miss Audrey Campbell, Sarah Payne, Pride of the Garden, Lady Nina Balfour, Mrs. Sutton, Gloire De Lavey, Amy Herbert, Zephyr, Miss Jane Douglas, Cassandra, Belladonna, Sadek, Don Juan, Miss M. Sullivan, Silver Strand, The Czar, Mrs S. Bouverie, Endymion, Mrs. Calby Sharpin, Lady Ridley, Pandelli Ralli, and Dick Donovan; these are in every way satisfactory.

The following varieties have shown signs of weakness, Lord Lyons, Gordine, Cardinal Wolsey, Sir B. Seymour, Zoe, Braw Lass, Annie Newman, Niphetos, Abigail, William of Wykeham, Mrs. F. Watts, Duchess of Portland, Joe Willet, Flora, Masterpiece, and Ellen Terry. J. H. McLeod, Roehampton.

LAW NOTES.

BANKRUPTCY OF W. CHAMBERS, FLORIST, HOUNSLOW.

THE Official Receiver for the Brentford district has now issued particulars under the failure of William Chambers, Florist, 147, High Street, Hounslow, and The Westlake Nursery, London Road, Hounslow, from which it appears that the debtor has filed a statement of affairs showing gross liabilities amounting to £671 13s. 1d., of which £593 14s. 1d. is due to unsecured creditors. The assets are estimated to produce £520 3s. 9d., from which £67 19s. has to be deducted for the claims of preferential creditors, payable in full, leaving net assets at £452 4s. 9d., and showing a deficiency of £141 9s. 4d. The debtor alleges his failure to have been caused through "Want of capital, bad debts, and bad seasons," and admits that he became aware two years ago that he had not sufficient property to pay his debts in full.

A preliminary meeting of the principal creditors was held at the offices of the Official Receiver, when it was decided that the business should not be carried

on, and that the Official Receiver should realise the effects belonging to the estate.

CLAIM FOR WORK PERFORMED.

MOORE v. GREENFIELD.—The plaintiff in this action, a builder, of Southfields, sued the defendant, who is connected with the Metropolitan Floral Association, Limited, to recover the sum of £18, at the last sitting of the Wandsworth County Court, before his honour Judge Lushington. The plaintiff stated that he received the order from the defendant, and rendered him the account in due course. The defendant never repudiated his liability, neither did he say that the work was for the firm. The work included certain hot-water fittings to a hot-house at Earlsfield. The defendant alleged that the work was done for the company, on whose behalf he gave the orders. His honour found for the plaintiff, the exact amount to be settled by an arbitrator, and the question of costs was reserved.

CARRIAGE OF ORCHIDS.—ACTION AGAINST THE GREAT EASTERN RAILWAY COMPANY.

On Friday, July 29, before Mr. Justice Day and a common jury, John Wm. Moore, nurseryman and Orchid importer, of Bradford and Rawdon, for whom Mr. Shepherd appeared, sued the Great Eastern Railway Company, who were represented by Mr. E. Tindal Atkinson, Q.C., and Mr. Kemp, for £123 13s., the value of 2473 Orchid plants, at 1s. each, which, it was alleged, were destroyed through the negligence of the defendant company.

The case for the plaintiff was that the Orchids were collected in Burmah, and shipped from Rangoon to Tilbury Docks, London, whence they were forwarded to Bradford by the Great Eastern Railway Company, who were, it was said, instructed to convey them in a "box truck," so as to protect them from the weather. The defendant company being unable, as they stated, to find a box truck at the short notice given, carried the plants in an open truck covered by straw and tarpaulin. The consequence was, the plaintiff alleged, that many of the plants were destroyed by rain, which penetrated the tarpaulin.

The defendant company denied that the condition of the Orchids was due to the rain, and in support of this contention, Mr. Atkinson put in the witness-box Mr. J. O'Brien, of Harrow-on-the-Hill, and a Fellow of the Royal Horticultural Society.

In the end the jury found for the plaintiff, and his Lordship gave judgment for the amount claimed. Stay of execution, however, was granted for ten days.

BOOK NOTICE.

VEGETATION AND SCENERY.

A LITTLE book, illustrated with plans and engravings, by Messrs. Olmsted, of Boston, U.S., under the above title, is intended more especially for the citizens of Boston. The general principles enunciated are, however, applicable everywhere else, according to local conditions. The report, it appears, was written by the late Charles Eliot, whose visit to this country some years since is not forgotten. The book deals with the "metropolitan reservations" secured by the city of Boston, and with the method of securing for the enjoyment of present and future generations such interesting and beautiful scenery as the lands acquired can supply. A detailed survey of the ground and of its vegetation is made. The latter is divided into—1, that of the summit; 2, of the swamp; 3, the coppice; 4, the field and pasture; 5, the bushy pasture; 6, the seedling forest.

It is a book from which the conservators of Epping Forest and similar areas, devoted to the public use, might derive many useful hints. We cannot particularise, but we may append the conclusions at which Mr. Eliot arrives from a consideration of the whole subject:—

"With regard to the relation of the vegetation of the reservations to the present and future scenery, perhaps the most important conclusions to be drawn from this investigation are the following: It is found that the vegetation of the reservations is an exceed-

ingly important component part of the scenery. It is found, moreover, that the present vegetation—its variety and beauty, as well as its monotony and ugliness—have resulted from repeated and continuous interference with natural processes by men, fire, and browsing animals.

"It follows that the notion that it would be wrong, and even sacrilegious, to suggest that this vegetation ought to be controlled and modified, must be mistaken. The very opposite is found to be the truth, namely, that as the beauty or ugliness, and scenic appropriateness or inappropriateness of the present vegetation is due to the work of men, so also will the vegetation of the future be beautiful in itself, and helpful or hurtful to the general scenery, according as it may or may not be skilfully restrained, encouraged, or modified during the next few years.

"Simply to preserve the beauty of so much of this vegetation as is now beautiful, or the suitability of so much as is now suitable—for example, the tree-fringed vales of grass, the open groves of great trees, the intricate shrubberies of old pastures, and the dwarf ground-cover of the hill-tops—will necessarily require continual painstaking care. To restore variety and beauty in the now more or less degenerate or ruined woods will similarly demand intelligent attention. So to control, guide, and modify the vegetation generally, that the reservations may be slowly but surely induced to present the greatest possible variety, interest and beauty of landscape will particularly require skilled direction.

"That such preservation, restoration, and enhancement of the beauty of vegetation and of scenery are only to be accomplished by the rightly-directed labour of men, is the principal lesson taught by this study of the present condition and the past history of the vegetation of the reservations. To preserve existing beauty, grass-lands must continue to be mowed or pastured annually, trees must be removed from shrubberies, competing trees must be kept away from veteran Oaks and Chestnuts, and so on. To restore beauty in such woods as are now dull and crop-like, large areas must be gradually cleared of sprout-growth by selling the standing crop, subsequently killing the stumps, and then encouraging seedling trees to take possession. To prepare for increasing the interest and beauty of the scenery, work must be directed to removing screens of foliage, to opening vistas through "notches," to substituting low ground-cover for high woods in many places, and to other like operations which are, in some measure, illustrated by the accompanying diagrammatic sketches. The sooner all these kinds of work are entered upon systematically, the finer will be the scenery of twenty and fifty years hence, and the more economically will that scenery have been obtained."

SOCIETIES.

CHESTERFIELD HORTICULTURAL.

JULY 27.—In delightful weather the annual exhibition of the above Society was held in The Queen's Park on the above date. Heavy rain early in the morning had helped to freshen up the flowering plants, and the park was looking at its best, and certainly the Chesterfield Corporation have just cause for feeling proud of their public park, and it is very pleasant to notice how the park increases in beauty year by year under the management of Mr. Wood, the Superintendent.

For a group of plants arranged for effect, to cover 150 square feet, Mr. Nelson, gr. to A. BARNES, Esq., Ashgate Lodge, maintained his well-earned reputation by gaining the 1st prize; followed closely by Messrs. ARTINDALE & SONS, Sheffield; Mr. HASLAM, Hardstoft; and PARKS, Whittington, in the order named. While for smaller groups (80 square feet), the 1st prize went to Mr. Mottershaw, gr. to A. G. BARNES, Esq., Tipton Hall; and 2nd, Mr. Polkinghorne, gr. to Mrs. BARNES, Ashgate House. For specimen Ferns, Mr. NELSON was followed by Messrs. POLKINGHORNE and HASLAM; while for stove or greenhouse plants, black and white Grapes, and collection of vegetables, Mr. NELSON also took 1st prizes.

With a group of tuberous rooted Begonias of very good quality, Messrs. PROCTOR & SONS, Chesterfield, were easily first, the same firm also occupying first place for thirty-six blooms of H. P. Roses and for twelve of Tea's, followed in each case by Mr. HASLAM.

Cut flowers, stove or greenhouse, twelve bunches, was an attractive class, and equal firsts were awarded to Messrs.

PROCTOR and Mr. NELSON; while for hardy or half-hardy flowers, eighteen bunches, a splendid lot of flowers were staged, and the prizes awarded, 1st, PROCTOR & SONS; and 2nd, ARTINDALE & SONS.

Mr. HORSMALL gained the premier position for Peaches; A. J. WESTBY for Nectarines and Melon, as well as for both red and yellow fruited Tomatoes.

Messrs. PROCTOR & SONS also showed in their best form for ball-room bouquet, bridal bouquet, and bouquet of Roses, in each case securing 1st honours. A very attractive feature of the show was a large collection of Caladiums from Messrs. ARTINDALE & SONS, Sheffield; and from Messrs. W. B. & SONS also came a fine collection of Sweet Peas.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 28.—At the meeting held at the Coal Exchange, Manchester, on the above date, there were present Messrs. G. Shorland Ball (in the chair), Law Schofield, Greenwood, Backhouse, Robson, and Mills (Hon. Sec.).

SAMUEL GRATRIX, Esq., Whalley Range (gr., Mr. McLeod) showed *Laelio-Cattleya Canhamiana alba* (First-class Certificate), and *Cypripedium excelsior* var. *Mars* (Award of Merit). G. W. LAW SCHOFIELD, Esq., Rawtenstall (gr., Mr. Schill), showed *Cattleya gigas Schofieldiana*, a small flower with an exceptionally dark coloured lip (First-class Certificate); *Cypripedium ciliolare* × *Philippense* (Award of Merit); and *C. Clinka berryanum*, *C. Philippense* × *C. Curtisii*. H. SHAW, Esq., J.P., Birch Vale (gr., Mr. Cliffe), showed *Cattleya Forbesii*. Messrs. J. VEITCH & SONS (Limited), Chelsea, showed *Laelio-Cattleya callistoglossa ignescens*, a very fine cross between *Cattleya gigas Sanderiana* and *Laelia alba purpurata* (First-class Certificate); *Laelio-Cattleya Amesiana*, a flower very good in form and substance, but lacking in colour, and being a cross between *Laelia crispata* and *Cattleya maxima* (Award of Merit); *Cattleya Eldorado alba*, *C. Enid*, *Laelio-Cattleya Zephyra*, and *Phaius Humbloti*. Messrs. CHARLESWORTH & Co., Bradford, showed a magnificent form of *Cattleya Gaskelliana alba* (First-class Certificate), and *Laelio-Cattleya Adolphus*, a cross between *L. cinnabarina* and *C. Acklandiae*. Mr. JOHN ROBSON, Altrincham, showed a good dark form of *Cattleya Schofieldiana* (Award of Merit), and *Brassia Lawrenceana longissima*.

NEWPORT AND COUNTY HORTICULTURAL.

JULY 23.—This Society held its annual show in King's High Field, Newport, on the above given date.

The exhibits generally were of much merit, and more particularly the flowering, stove, and greenhouse-plants, from Messrs. CYPHER & SONS, Cheltenham, and Mr. LOCKYER, of The Gardens, Pontypool Park. Amongst cut flowers, the Roses, Carnations, Picotees, and Dahlias, were remarkably good. Vegetables were also well shown in the open and in the cottager's classes. Amongst fruits, however, there was nothing excepting Gooseberries of particular merit. With few exceptions Grapes lacked colour, Peaches and Melons were but second rate, and the date was too early for Apples and Plums to be shown. Pieces of Silver Plate were offered as 1st, 2nd, and 3rd prizes for table-decorations, open to ladies only, each table to seat eight persons. There were fourteen entries in this class, a tent being devoted to them, where they made a very attractive display.

Six Stove and Greenhouse Plants in bloom.—1st, Messrs. CYPHER & SONS, Cheltenham, with grand plants of *Phenacoma prolifera Barnesii*, *Statice profusa*, *Ixora Williamsii*, *I. Prince of Orange*, *Stephanotis floribunda*, and a *Kalosanthes*. Mr. LOCKYER, gr., Pontypool Park, who was a very good 2nd, had good, fresh, well-flowered plants, a size smaller than the 1st prize lot, of *Erica depressa*, *Bougainvillea tanderiana*, *Clorodendron Balfourianum*, *Anthurium Scherzerianum*, *Allamanda grandiflora*, and *Ixora Williamsii*.

Four Stove and Greenhouse Plants.—1st, Mr. ROBINSON, Cardiff, with good plants of *Allamanda Hendersonii*, *Bougainvillea glabra*, *Ixora Williamsii*, &c. Col. WALLACE, Newport, followed closely with *Eucharis amazonica*, *Clorodendron Balfourianum*, *Rondeletia speciosa*, &c.

Six Ornamental Foliage Plants.—With these Messrs. CYPHER & SONS, were again 1st, having large plants of *Kentia Belmoreana*, *K. Fosteriana*, *K. australis*, *Latania borbonica*, *Croton Cheloni*, and *C. angustifolius*; 2nd, W. J. BUCKLEY (gr., Mr. Carpenter), who had good specimens of *Croton Warreni*, *C. Weismanni*, *Thrinax elegans*, &c.

A Specimen Stove-plant.—Mr. LOCKYER was 1st with a grand *Clorodendron Balfourianum*; 2nd, Mr. ROBINSON, with *Allamanda Hendersonii*.

Group (Open) of Plants arranged in a space 11 feet in diameter.—1st, Mr. ROBINSON, with a light arrangement of plants, those most prominent being *Lilium speciosum*, *Gloxinias*, *Ixoras*, *Dracenas*, *Palms*, and *Ferns*; Colonel WALLACE was a close 2nd with a group similar to the above. The pots were too visible in both the winning groups. The unsuccessful groups lacked bright colours, and were too heavy in the arrangement of the plants.

Group arranged in 50 square feet.—Here W. J. BUCKLEY, Esq., was placed 1st with good plants, well arranged, consisting of *Cattleyas*, *Cypripediums*, *Lilium auratum*, *Begonias*, *Palms*, *Ferns*, &c., edged with *Panicum variegatum*; 2nd, R. D. BROWNING, Esq. (gr., Mr. H. A. Joy), who likewise had a beautiful group, somewhat more heavily arranged, than the 1st prize group.

CUT FLOWERS.

Roses, twenty-four Hybrid Perpetual, distinct.—1st, Mr. STEPHEN TRESEDER, Cardiff, with beautiful blooms, his best being Duchesse de Morny, Duchess of Bedford, Mons. Etienne Levet, Kaiserin Aug. Victoria, Fisher Holmes, Alf. Colomb, and Madame Victor Verdier; 2nd, Mr. CROSSLING, Ennarth, his best being Ulrich Brunner, Countess of Rosebery, Chas. Lefebvre, Marchioness of Dufferin, Dupuy main, &c.

Roses, twelve Tea-scented.—1st, Mr. S. TRESEDER, with fine blooms of Innocente Pirola, Hon. E. Gifford, The Bride, Furiel Grahame, Comtesse de Nadaillac, &c.; 2nd, Mr. CROSSLING.

Carnations, twelve distinct.—1st, A. W. PIKE, Esq., Cardiff, with large, well-coloured blooms of Horace Trelawney, Miss L. Terry, Germania, Nisbet Hall, Rifleman, Cardinal Wolsey, &c.; Mr. W. TRESEDER, Cardiff, was a good 2nd, with well-formed blooms, smaller than the 1st lot.

Twelve Picotees.—1st, Mr. W. TRESEDER, with Amelia, Mr. Sharp, Mr. Rudd, Mr. Wilson, Mr. Kingston, &c.; 2nd, A. W. PIKE, Esq.

Dahlias, twenty-four, double.—1st, Mr. W. TRESEDER, who had William Keith, Warrior, Buffalo Bill, Kathleen, Flora Wyatt, Harry Heath, Mr. Glascock, &c.

Twelve bunches, Dahlias, Cactus.—1st, Mr. W. TRESEDER, with Starfish, Miss A. Jones, Fusilier, J. T. Barber, Matchless, Standard Bearer, J. E. Trewer, &c.; 2nd, Mr. BASHAM, Bassaleys.

Mr. W. TRESEDER was 1st in the classes for wreaths, crosses, and bouquets; W. JONES & SON, Maindee, being 2nd in each class.

FRUIT.

Collection of Fruit, six varieties.—1st, Mr. PITT, Abergarrenny, with a Queen Pineapple, Muscat and Black Hamburg Grapes, Countess Melon, Barrington Peaches, and a fine dish of Pineapple Nectarines; 2nd, Mrs. PARKINSON.

Grapes, white, three bunches.—1st, S. DEAN, Esq., with good bunches of Buckland Sweetwater; 2nd, Mr. PITT.

Black Grapes, three bunches.—1st, H. A. BROWNING, Esq., with Black Hamburg; 2nd, Mr. PITT.

Peaches, dish of five fruits.—1st, E. LEWIS, Esq. (gr., Mr. Green), with Barrington; 2nd, Mr. PITT, with Royal George.

For table decorations.—Mrs. GRATTE was deservedly placed 1st, with an exquisite light arrangement; Mrs. COULMAN being a good 2nd; Mrs. THEODORE VACHELL, 3rd; and Mrs. CHAS. FIRBANK, 4th.

HORNSEY HORTICULTURAL AND ALLOTMENTS ASSOCIATION.

AUGUST 1.—The third annual exhibition of the above association was held on Bank Holiday, and attracted several thousands of local residents. The entries numbered 568, an advance of 260 on the figures of the previous year.

The quality of the exhibits was held by the judges, Mr. Burt, The Gardens, Caenwood Towers, Highgate; Mr. J. Brooks, of Highgate; and Mr. E. Rowbottom, Bishopsdown Estate, Tunbridge Wells, also to have considerably improved, though the dry weather has been severely felt. The vegetables were particularly good, and there was keen competition, except in the case of Scarlet Runners and French Beans, which were poorly represented. One exhibitor took eight 1st prizes, six 2nd, and seven 3rd. Mr. W. Wood, Middlesex County Council, opened the show, in the absence of Mr. H. C. Stephens, M.P. for the division, and he was supported by Mr. Lowles, M.P., of Haggerstone, and several members of the District Council. A programme of sports was carried out in the afternoon, and in the evening the prizes were distributed by Mrs. W. P. Wood. A good band was in attendance all day.

CASTLEFORD FLORAL AND HORTICULTURAL.

AUGUST 1, 2.—The eleventh annual show was opened on the Football Field, and, like its predecessors, it was a great success. The committee offer liberal prizes, and the result is that they attract good exhibits from the North of England.

The following were the most interesting among many exhibits of great merit. For the group of plants arranged for effect (175 square feet), Mr. JOE SHARP, of Almondbury, was 1st, with a light and graceful arrangement, the group including some grand Crotons. The 2nd prize went to T. BLACKER, of Selby, who showed good-coloured Crotons, but lacked taste in arrangement.

For twelve stove or greenhouse plants, there was a strong fight, the Marquis of ZETLAND (gr., Mr. Nicholas), being 1st, showing some grand specimens of Crotons Warreni and angustifolius, Dipladenia Boliviensis and Williamsii, Anturium Scherzerianum and Wardi, also a very fine piece of Stevensia grandiflora, and Cycas circinalis. The 2nd prize was won by Mr. JOE SHARP, who had a good exhibit. For six stove or greenhouse plants, Mr. JOE SHARP was 1st, showing, among others, a fine piece of Anthurium Scherzerianum of a good variety. For six Ferns, stove or greenhouse varieties, the Marquis of ZETLAND got 1st with good plants of Cyathea debata, Gleichenia flabellata, G. rupestris glaucescens, Adiantum Farleyense, &c. For four Crotons, 1st, Mr. JOE SHARP, with nicely coloured plants. Four Dracenas, the Earl of ZETLAND, whose collection included a nice plant

of Dracaena Doucetti variegata. Six zonal Pelargoniums, 1st, Mr. J. BLACKER, with a nicely grown lot of good varieties.

In the cut bloom classes the exhibits were not so numerous, but those shown were of fine quality. For thirty-six Rose blooms, distinct, Messrs. J. & R. CALEM, of Wakefield, were 1st, with clean fresh blooms. For twelve Roses, Messrs. J. & R. CALEM were again 1st.

In the fruit classes, the premier awards were taken by Lady BEAUMONT, Carleton Towers (Mr. Nicholls, gr.), who staged some excellent examples of Buckland Sweetwater. In the class for black Grapes, some splendid bunches of Madresfield Court were shown by the Marquis of ZETLAND.

One of the great objects of this Society is to encourage the love of gardening among the miners and glass-blowers who compose the major part of the population of the district, and the committee certainly may congratulate themselves on this point, as the cottagers' and amateurs' exhibits, while being numerous, were also of high quality when the smoky district and other difficulties are taken into account. Surely these are the localities in which flower shows and cottage gardening should be encouraged. J. C.

LEICESTER FLOWER SHOW.

AUGUST 1, 2.—Hitherto this popular midland show has been held on the first Tuesday in August, but this season the committee changed the opening day to Monday, as Bank Holiday is largely observed in the Midlands. The result was a falling off in some leading features, consequent upon the difficulties attendant on Sunday travelling, and especially in the Rose classes.

The Leicester committee, no doubt, had good reasons for the change of day, but as they are so largely dependent upon exhibitors from a distance, it is a moot question whether it would not be better to revert to the old arrangement of a Tuesday show.

Six spacious tents were required to accommodate the exhibits; the day was brilliantly fine, and there was a large attendance, notwithstanding that there were many other attractions in the town. Rain is badly wanted at Leicester, and especially in the Abbey Park. The heavy soil can be seen cracking in many directions, still the beds and borders are delightfully gay, and Mr. J. Burns' masterpiece of sub-tropical gardening can now be seen at its best.

Specimen plants are not a strong feature at Leicester. What is wanted there is an object lesson in plant exhibiting, but such finished specimens as are met with from Cheltenham can be got to Leicester only through the medium of attractive prizes. There was a class for six specimen plants, of which three were foliage plants. Mr. Blake, the gr. to P. H. MUNTZ, Esq., Dunsmore, Rugby, was 1st, and Mr. H. ROGERS, a local nurseryman, 2nd. Some good Palms were staged; the best specimen plants were Bougainvillea Sandariana, Allamanda Schottii, Statice profusa, and Plumbago capensis alba.

Fuchsias were represented by nice bush specimens, well grown and bloomed. Mr. H. ROGERS was 1st, and Mr. J. WRIGHT, nurseryman, Leicester, 2nd.

Good specimens of zonal Pelargoniums, single and double, formed striking patches of colour. With six single flowered Mr. WRIGHT was 1st, and Mr. G. PERKINS, another local nurseryman, second. The double varieties were better than the single. Here Mr. ROGERS took the 1st prize, while Mr. WRIGHT was 2nd.

Single tuberous rooted Begonias showed well-grown and bloomed plants, the best coming from Mr. WRIGHT, Mr. ROGERS falling behind in this case. No double-flowered varieties were staged. The best plant in bloom was a Stephanotis floribunda from Mr. J. G. HARRISON, Belgrave; Mr. ROGERS came 2nd with Allamanda Schottii; and Mr. G. PERKINS was 3rd with a pretty specimen of Begonia corallina.

Groups.—The class for a group of plants, filling a space of 150 square feet, brought two remarkably good ones, arranged on a square pattern, which now so much prevails, having a centre and side mounds, with a bed of dot plants. Mr. BLAKEWAY was 1st, being richer in all leading respects, his gaily-coloured Crotons being much more effective on the side mounds than the green Palms used by Mr. BLAKEWAY, who was placed 2nd; but both were excellent object-lessons in effective plant-grouping. There were other plant classes, but they contained nothing requiring special notice.

Roses are generally a leading feature among cut flowers at Leicester, but, for the reason already stated, there was a decided falling off; the best blooms came from the home counties; the best thirty-six blooms coming from the Hitchin nurseries of Messrs. HARKNESS & SONS, and included fine blooms of Her Majesty, Madame Eugène Verdier, Comte Raimbaud, Madame Hoste, Madame Delville, Ulrich Brunner, Helen Keller, Etienne Levet, A. K. Williams, Harrison Weir, Comtesse de Nadaillac, François Michelin, Souvenir d'Elise, &c. An extra prize was awarded to Mr. A. G. GREEN, Colchester, who had not complied with the requirements of the schedule.

Messrs. HARKNESS & SONS also had the best twenty-four, which contained the following, in fine character:—Mrs. J. Laing, Her Majesty, Etienne Levet, Fisher Holmes, Alfred Colomb, Madame Eug. Verdier, &c.; 2nd, Mr. A. G. GREEN.

The best twelve Teas and Noisettes also came from Messrs. HARKNESS & SONS, and included Maman Cochet, Souvenir d'Elise, Comtesse de Nadaillac, Innocente Pirola, Marie Van Houtte, and Niphetos; Messrs. J. COCKER & SONS, Aberdeen, were 2nd. The best twelve blooms of any other variety

were those of Mrs. J. Laing, from Messrs. HARKNESS & SON. Mr. A. G. GREEN was 2nd, with the same. The best twelve of any other variety of Tea was Maman Cochet, also from Messrs. HARKNESS & SONS; the Rev. M. JACKSON, Stagden Vicarage, was 2nd, with Catherine Mermet.

There were classes also for amateurs, the leading prizes being taken by the Rev. J. H. PEMBERTON, Haveing, Romford, who showed remarkably good flowers for so late in the season. The best Rose in the show was Her Majesty, in Messrs. HARKNESS & SONS' stand of thirty-six blooms, run close by a brilliant Victor Hugo from the Rev. J. H. PEMBERTON.

Carnations and Picotees were good for the season, Messrs. THOMSON & CO., Sparkhill, Birmingham, taking the 1st prize, for twelve Carnations, twelve yellow grounds, selfs or fancies, and twelve Picotees. These were also shown in classes for single blooms, and in bunches. One collection of twelve bunches of hardy annuals from Mr. W. F. GUNN, Olton, illustrated some of the prettiest for garden decoration.

Banks of Hardy Flowers, filling a space each of 15 feet by 5 feet, were a very striking feature; large and bold bunches were produced in the best condition. It led to a very spirited contest between Messrs. COCKER & SONS, W. F. GUNN, and HARKNESS & SONS, the prizes being awarded in the order named. Delphiniums, Lilies, Lathyrus, Gladiolus, Coreopsis, Scabious, and other leading subjects were seen to the best advantage.

Fruit was not largely staged, but what there was of it was remarkably good. Mr. H. GOODACRE, Elvaston Castle Gardens, Derby, was 1st, with eight dishes, three varieties of Grapes being permitted. He had two bunches each of well-finished Black and Muscat Hamburgs, and Muscat of Alexandria; a good Queen Pine; Royal George Peaches; Pineapple Nectarine; large and beautifully-coloured Lady Sudeley Apples from an orchard-house, and a fine Melon. Mr. A. McCULLOCK, Newstead Abbey Gardens, was 2nd, having the same varieties of Grapes, but staging Madresfield Court in the place of Muscat Hamburg; Goshawk Peaches, Pitmaston Orange, and Lord Napier Nectarines, &c.

The Veitch Memorial Trustees offered their Medal and £5 sterling for a collection of fruits, in eight distinct kinds, two varieties of Grapes being allowed. Here the judges unfortunately interpreted kinds as being synonymous with varieties, and awarded Mr. McCULLOCK the prize, he having in his collection two dishes of Peaches and also of Nectarines. It will be observed that in the wording of the class, a distinction is drawn between the terms, "kinds" and "varieties," which was overlooked by the judges, and they were apparently unaware that the Abbey Park Flower Show is affiliated to the Royal Horticultural Society, and therefore bound by their published rules for judging. They should have disqualified Mr. McCULLOCK, and awarded the 1st prize to Mr. J. H. GOODACRE, who was placed 2nd, and who staged Muscat Hamburg and Muscat of Alexandria Grapes; Noblesse Peaches, Victoria Nectarines, Lady Sudeley Apples, Figs, Melons, and Strawberries.

The best four varieties of Grapes, two bunches of each, were staged by Mr. McCULLOCK, who had well-finished bunches of Madresfield Court, Gros Maroc, Muscat Hamburg, and Muscat of Alexandria; Mr. GOODACRE was 2nd, having Alwick Seedling in the place of Madresfield Court. Mr. GOODACRE was the only exhibitor of a Pine, staging a good Queen. He was also 1st with two bunches of Black Hamburg Grapes, very well finished; Mr. A. J. ELPHINSTONE, Woodthorpe Grange Gardens, Nottingham, was 2nd. With two bunches of White Muscat, Mr. GOODACRE was 1st, and Mr. KNOWLES, Buckminster Park, Grantham, was 2nd. Any other black was represented by Madresfield Court, from Mr. McCULLOCK; Mr. GOODACRE was 2nd with Muscat Hamburg. Any other white was Duke of Buccleuch, which gained the 1st prize for Mr. McCULLOCK; Mr. ELPHINSTONE coming 2nd with Buckland Sweetwater.

The best dish of Peaches was Royal George, from Mr. BLAKEWAY, Dunsmore Gardens, Rugby; Mr. GOODACRE coming 2nd with Grosse Mignonne. The latter had the best dish of Nectarines, staging Pitmaston Orange; Mr. McCULLOCK was 2nd with the same. The best Strawberry was Waterloo; Duke of Edinburgh was 2nd. There was but one exhibit of dessert Apples—a splendid dish of Lady Sudeley from Mr. GOODACRE, worthy a double 1st. The best dessert Plum was Jefferson's, from Mr. GOODACRE. Currants, red, white, and black, were numerous and fine, and there were very fine Tomatos, classed at Leicester among fruits. Bush-fruits in good character were also shown by cottagers.

Vegetables were shown in several divisions; in the class for twelve varieties, open to all, Mr. R. SHAW, Garrendon, took the 1st prize with a very fine collection, and he was also 1st with six dishes of finely-finished Potatos. The special prizes offered by Messrs. Sutton & Sons, Harrison & Sons, C. Warner, James Wright, and others brought good competitions.

Miscellaneous collections greatly helped the general effect. Messrs. W. CUTBUSH & SONS, Highgate Nurseries, set up a very tasteful group of plants and flowers. Mr. LAWSON, gr. to Mrs. ELLIS, Knighton, Leicester, had a charming group of foliated plants and Ferns; Mr. J. H. GOODACRE, a fine group of Malmaison Carnations and Sweet Peas; Mr. H. ECKFORD, Wem, delightful vases full of new and choice Sweet Peas; Mr. H. ROGERS, greenhouse plants and Pelargoniums; Mr. H. DEVERILL, Banbury, a very good collection of cut hardy flowers; Messrs. HARRISON & SON, choice vegetables and Sweet Peas; Messrs. J. R. PEARSON & SONS, Chilwell, had a collection of Gooseberries; Messrs. W. & J. BIRKENHEAD, one of their very interesting collections of Ferns; Mr. J. WRIGHT, hardy flowers; Mr. D. LESTON, the Gardens, Quacksick House, Leicester, some very pretty bunches of violas; Mr. HODGKINS, skeleton flowers and leaves, &c.

MARKETS.

COVENT GARDEN, AUGUST 4.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms	3 0-4 0	Orchids:—	
Carnations, pr. doz.		Cattleya, 12 bms.	5 0-8 0
blooms ...	1 0-3 0	Odontoglossum	
Eucharis, per dozen	2 0-4 0	crispum, 12 bms.	2 0-4 0
Gardenias, per doz.		Pelargoniums, scar-	
blooms ...	1 6-3 0	let, per 12 bun.	3 0-5 0
Gladioli, white, doz.		— per 12 sprays...	0 4-0 6
sprays ...	0 3-1 0	Roses, Tea, p-r doz.	0 6-1 0
Lilium Harrisii, per		— yellow (Pearls),	
dozen blooms ...	2 0-4 0	per dozen ...	1 0-2 0
Lily of the Valley,		— pink, per dozen	2 0-4 0
dozen sprays ...	0 6-1 0	— Safrano, p doz.	1 0-2 0
Maidenhair Fern,		— red, per dozen	0 6-1 0
per 12 bunches ...	4 0 8 0	Stephanotis, doz.	
Mignonette, per 12		sprays ...	1 0-1 6
bunches ...	2 0-4 0	Tuberose, 12 blms.	1 0-1 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	4 0-12 0	Fuchsias, per doz.	6 0-9 0
Aspidistras, p. doz.	12 0-30 0	Foliage plants, per	
— specimen, each	5 0-15 0	dozen ...	12 0-36 0
Calceolarias, per doz.	5 0-7 0	Heliotropes, p. doz.	5 0-7 0
Coleus, per doz.	3 0-4 0	Hydrangeas, various,	
Crassula, per doz.	12 0-24 0	per doz. ...	10 0-18 0
Dracenas, each	1 0-7 6	Liliums, various,	
— various, p. doz.	12 0-24 0	per dozen ...	12 0-3 0
Ericas, various, per		Marguerites, p. doz.	6 0-12 0
dozen ...	12 0 30 0	Mignonette, p. doz.	4 0-6 0
Evergreen shrubs,		Palms, various, ea.	2 0-10 0
in variety, p. doz.	6 0-24 0	— specimens, ea.	10 6-84 0
Ferns, small, per		Pelargoniums, doz.	12 0-18 0
dozen ...	1 0-2 0	Rhodanthus, p. doz.	4 0-6 0
— various, p. doz.	5 0 12 0	Scarlets, per doz.	3 0-6 0
Ficus elastica, each	1 0-7 6	Spinneas per dozen	6 0-9 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, St. Juncating	3 6-4 6	Gooseberries, per	
— Keswicks, &c...	2 3-2 6	sieve ...	1 6-1 9
Apricots, box, doz.	0 7-0 8	— ripe yellow, per	
— baskets ...	2 0-3 0	sieve ...	2 6 —
Bananas, bunch ...	8 0-10 0	— red, per sieve...	2 6 —
Cherries, English,		Melons, each ...	1 1-1 9
Bigeon and		Nocturnes, doz. ...	6 0-8 0
white ...	4 0-9 0	— second quality	2 0-4 0
— Caroons and		Peaches, per doz.	
black ...	5 0-6 0	(according to	
Currents, black,		size) ...	6 0-8 0
per sieve ...	5 0-6 0	— Second quality	2 0-4 0
— red ...	2 6-4 6	Pines, each, from...	8 0-5 0
Figs, per dozen ...	1 0-2 0	— English Queens	6 0 —
Grapes, English,		Raspberries, doz.	
Hamburg, lb.	1 0-1 6	punnets ...	4 0-5 0
— Belgian, per lb.	0 6 —	— tubs, cwt. ...	88 0-40 0
— Channel Isles,		Strawberries, Kent,	
per lb. ...	0 9 —	pecks ...	2 0 —
— Muscats, per lb.	2 0-2 6	— punnets, dozen	3 0-6 0
Greengages, foreign,		— Queens, dozen	6 0-8 0
baskets ...	2 9-3 0	Walnuts, green, per	
— boxes, 11lbs. nett	2 6-4 0	bushel ...	4 0 —

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Mint, per dozen	
per doz. ...	0 9-1 6	bunches ...	2 0-3 0
Beans, English		Mushrooms, per lb.	0 10-1 0
(Dwarf), sieve ...	3 0-4 0	Onions, Dutch ...	4 6-5 0
— Scarlet, in bus.	5 0-6 0	Onions, green, per	
— French, flats ...	8 6 —	doz bun ...	2 0-4 0
— Broad, bushel...	1 0-1 6	— Valencia and	
Beetroots, new, per		Oporto, cases ...	5 0-6 0
dozen ...	1 0 —	Parsley, per dozen	1 0-2 0
— p. tally of 60 ...	4 0-5 0	— sieve ...	1 0 —
— bunches, doz ...	3 0-4 0	Peas, bags ...	4 0-6 0
Cabbage, open, doz.	1 0 —	— bushel ...	3 6 6 0
— open, p. tally ...	3 0-5 0	Potatoes, Bedfords	60 0-80 0
Cauliflowers, Eng-		— Puritans and	
lish, per dozen	2 0-3 0	Snowdrops, best	
Cress, doz. punnets	1 6 —	Kent, per bushel	2 6-3 0
Carrots, New, bun-		— Kent Kidneys,	
ches, per dozen	1 6-3 0	per bushel ...	4 0-5 0
Celery, new, bundle	1 0 1 6	Radishes, Round,	
Cucumbers, p. doz.	2 0-3 0	breakfast, per	
Endive, new, per		dozen bunches	
dozen ...	1 6 —	(home grown) ...	1 3 —
Garlic, new, per lb.	0 4 —	Salad, small, pun-	
Horseradish, foreign		nets, per dozen	1 3 —
per bundle ...	2 0-2 6	Shallots, good, per	
New English ...	3 0 —	cwt. ...	14 0 —
Leks, new, dozen		Spinach, 1/2-bushel...	1 3-1 6
bunches ...	1 6-2 0	Tomatoes, English,	
Lettuce, Cabbage,		per lb. ...	0 3 1/2-0 4 1/2
home - grown,		— Channel Isles,	
per doz. ...	1 0-1 6	per lb. ...	0 3 —
— Paris Cos, home-		Turnips, new Eng.,	
grown, per score	1 6-2 6	per dozen ...	3 0-5 0
Marrows, Vege-		Watercress, p. doz.	
table, per dozen	1 0-1 6	bunches ...	0 4-0 8
— per pot ...	3 0 —		

REMARKS.—The English Queen Pines were very well grown, and I should estimate their weight 8 lb. I have not seen anything like them for a long time. Strawberries will now soon be over. Scarlet Beans and Marrows will now come on fast and prices no doubt will be lower. Cabbage are a little better trade. Peas now come awkward for some buyers; that is, choice quality is not so plentiful; the same applies to Lettuce, they will run so quickly when they get the sun on them. Potatoes appear at present very good; the sieve and half bushel are the same basket, but under some circumstances called by the different names. Egyptian Onions are over.

POTATOS.

60s. to 90s. per ton, John Bath, 32 and 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: August 3.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that to-day's seed market, as was to be expected, was thinly attended with scarcely any business passing. Good new English Trifolium is now selling at low rates. The new Dutch Rape seed shows good quality, and meets a steady sowing inquiry, as does white Mustard seed. The birdseed trade is very slow, and there is hardly anything doing in either Blue Peas or Haricot Beans. Other articles at this dull period call for no remark.

FRUIT AND VEGETABLES.

GLASGOW: August 3.—The following are the averages of the prices at this market during the past week:—Apples, Canadian Spy, 24s. to 26s. per barrel; ditto, Russets, 24s. ditto; ditto, Western States (Winesops), 20s. to 22s. do.; ditto, Russets, 18s. ditto; Tomatos, Guernsey, 6d. to 7d. per lb.; Grapes, home, 3s. 6d. to 4s. ditto; ditto, foreign, 6d. to 1s. ditto; Gooseberries, 3s. 6d. to 4s. per stone; Cabbages, spring, 7d. to 10d. per dozen; Cauliflowers, English, 1s. to 1s. 3d. per bunch; ditto, Dublin, 2s. 6d. per dozen; Herbs, 1d. to 2d. per bunch; Mint, green, 6d. to 9d. do.; Onions, 5s. 6d. per cwt.; do., Portugal, 14s. to 15s. per case; Parsley, 1s. to 1s. 6d. per stone; Potatos (best), 1s. do.; Peas, 1s. to 1s. 9d. do.; Cucumbers, 3d. to 5d. each; Lettuces, 6d. to 9d. per dozen; do., Cos, 6d. to 1s. do.; Radishes, 9d. to 1s. 6d. per doz. bunches; Horse-radish, 1s. 6d. per bundle; Mushrooms, 1s. to 1s. 2d. per lb.; Beetroots, 7d. to 8d. per dozen; Spinach, 1s. 6d. to 2s. per stone; Rhubarb, 2s. 6d. to 3s. per cwt.; Turnips, white, 2d. to 3d. per large bunch; Broccoli, 1s. 6d. to 2s. 6d. per dozen; Greens, 2s. per ten dozen; Asparagus, 1s. 6d. to 2s. per bundle; Syllies, 4 1/2d. to 6d. per bunch.

LIVERPOOL: August 3.—Average of the prices at undernoted markets:—St. John's: Potatos, 8d. to 1s. per peck; Peas 8d. to 1s. do.; Asparagus, 2s. 6d. to 3s. per 100; Cucumbers, 3d. to 6d. each; Gooseberries, 1 1/2d. to 3d. per lb.; Cherries, 4d. to 6d. do.; Apricots, 1s. per dozen; Currants, red, 4d. to 6d. per lb.; do., black, 6d. do.; Grapes, English, 5s. 6d. to 3s. do.; do., foreign 6d. to 8d. do.; Pines, English, 5s. to 7s. each. Birkenhead: Potatos, 16d. to 1s. per peck; Peas, 10d. to 1s. do.; Cucumbers, 2d. to 6d. each; Apricots, 9d. to 1s. per dozen; Gooseberries, 2d. to 3d. per lb.; Cherries, 6d. to 8d. do.; Strawberries, 4d. to 6d. do.; Currants, red, 6d. do.; do., black, 6d. do.; Grapes, English, 1s. 6d. to 2s. 6d. do.; do., foreign, 6d. to 8d. do.; Pines, English, 5s. 6d. to 8s. each; Mushrooms, 1s. to 1s. 6d. per lb. North Hay: Potatos, per cwt., Early Regents, 2s. 8d. to 3s. 9d.; Kidneys, 2s. 9d. to 3s. 6d.; Turnips, 6d. to 8d. per dozen bunches; do., Swedes, 2s. 3d. to 3s. 9d. per cwt.; Carrots, 6d. to 8d. per dozen bunches; Onions, foreign, 3s. 6d. to 4s. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Lettuces, 6d. to 8d. per dozen; Cucumbers, 1s. to 1s. 6d. do.; Cauliflowers, 1s. 3d. to 2s. 6d. do.; Cabbages, 4d. to 5d. do.; Peas, 1s. 8d. to 2s. per bushel; Beans, 9d. to 1s. do.; do., Kidney, 1s. 4d. to 1s. 6d. per peck.

NOTICES TO CORRESPONDENTS.

ACARUS: Mrs. W. The Acari are Tyroglyphus longior, probably the commonest of all Acari; it is very destructive to dried and preserved vegetable and animal matter, such as hay, cheese, &c., when it is in large numbers, but it does not usually attack living animals or plants. If the material were baked the Acari would be destroyed. They swarm in most houses and warehouses, but it is only when the numbers become very large that the ravages are usually noticed. Albert D. Michail.

CENTRAL AFRICAN COTTON: W. B., Hamburg. We are unable to afford the information asked for. It is probable that the plant is not a Gossypium but a Bombax, and useless for manufactures.

CHERRIES: Japonica. Regret that we cannot name the Cherries with any degree of certainty.

CUCUMBER: A. Lea. Eel-worms at the root from the loam you have used. Next time, soak the soil in boiling water for an hour or two before using.

ERRATUM: In the notice by "R. D." of Grimstone's History of the Egyptian Pea, see Gardeners' Chronicle, p. 54, July 16, 1898, for Peter Law's & Sons, read Peter Lawson & Sons.

GROUP OF PLANTS, &c.: R. Basil. The decision of the judges, when read in the light of the schedule, should have been, as we think, to disqualify an exhibit that failed to fill the required space by 2 feet 8 inches. The group might have been allowed had the schedule stated that a space of 18 feet by 10 feet was not to be exceeded; whereas in the case stated the area to be covered was definitely stated. Officials may exhibit provided the judges are unaware of the name of the person upon whose exhibit they have to adjudicate.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—M. N. R. Alonsoa incisifolia.—F. E. M. Lycaste leucantha.—Tempus fugit. 1, Cotyledon umbilicus. The Geraniums we cannot name. Send them to some nurseryman who grows them largely, but take care to pack them properly!—F. J. 1, Symphoricarpos racemosus, Snowberry; 2, Acer monspessulanum; 3, Ginkgo biloba; 4, Ruscus aculeatus, Butcher's Broom; 5, Rhus Cotinus; 6, Eriobotrya japonica, Loquat.—J. R. Wotton. 1, We do not recognise it; 2, Koeleria paniculata.—G. T. R. 1, Adiantum capillus veneris; 2, Stenactis speciosa; 3, Polypodium vulgare; 4, Caragana arborea; 5, Cistus Ladanum; 6, Adiantum formosum.—J. L., Bickington. 1, Calycanthus occidentalis; 2, Lychnis chalcidonica; 3, Leycesteria formosa.—Tin Box, no name, no number. The flower Eccremocarpus scaber, Ampelopsis quinquefolia, Alyssum (Königa) maritima.—H. R. S. 1, Umbellifer, not recognised—no fruit; 2, Spiraea ulmaria; 3, Mentha arvensis; 4, Erythraea Centaurium; 5, Prunella vulgaris; 6, Anagallis arvensis; 7, Senecio Jacobaea.

PEACH LEAVES: R. A. Your trees are suffering from what, for want of a better name, we call silver-leaf disease. It affects Plums, Peaches, and Portugal Laurels, either indoors or outdoors, and is very fatal. We believe it is caused by a fungus, but the matter has never been cleared up. It is from no lack of attention on your part. Cut away all the diseased portions, and apply plenty of manure-water in the growing season, so as to strengthen the plant, and allow it possibly to out-grow the malady.

PEAR: Fruit Grower. Your leaves are attacked by the slug-worm of the Pear tree (Selandria atra). The "slugs" will eventually turn into a saw-fly. Dust the leaves with quicklime, or syringe with tobacco-water.

ROSE SHOOT WITH IMPERFECT LEAVES: T. T. The form of leaf sent is not uncommon on plants not favourably situated as regards abundant sunlight; and the fact that plants in more exposed parts of your garden having escaped disfigurement of this kind seems to point to this lack of sunlight being the contributory cause.

"THE BEST KEPT AND CROPPED GARDEN": F. C. In the absence of any stipulation to the contrary, we should certainly look for hardy fruit, as well as vegetables and flowers.

VINES AND VINE-BORDER SOIL: A. B. The samples of soils sent seem to be most unsuitable for the Vine, and that it is so is shown by the samples of roots and shoots. The former are entirely destitute of feeding roots, and are incapable of deriving nourishment from the soil. We do not suppose you can do anything with such soil, and should recommend a new border to be made and new Vines planted. Doubtless the border is a very old one, and it was certainly made of bad materials. The drainage being good, we cannot understand in what manner the wet autumn of 1896 could affect it.

VINE-LEAVES EATEN IN HOLES, AND GRAPES GNAWED: S. Smith. The caterpillar of some kind of Ermine-moth. You might render the leaves distasteful by quassia water; or, what is better, use Richards' XL-All, which kill the grubs and will not hurt the Grapes, and these will be fit for eating a few days later.

COMMUNICATIONS RECEIVED.—W. Lumsden.—D. Stewart.—J. O'B.—J. B.—E. S.—F. A. W.—J. L. Sdhet.—E. W.—W. E. G.—W. Miller, Ithaca.—G. O.—W. P.—W. S.—Mr. Parker.—W. G. M.—J. V. & Sons.—D. T. F.—T. Chrity.—F. W. S.—E. C.—G. F. B. & W.—J. McL.—J. C.—W. S.—H. K. J. W.—W. H. D.—A. D.—F. A. W.—R. F. B.—Chas. de B.—E. S.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—W. S.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, MORE THAN DOUBLED, and that it continues to increase weekly. Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is reserved for reference in all the principal Libraries.

(For remainder of Markets and Weather, see p. vii.)



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 13, 1898.

THE ANXIETIES OF THE ROSE-GROWER.

IF it be true that "uneasy lies the head that wears a crown," I am sure that it is equally true that he who goes in largely for growing and exhibiting Roses, oftentimes finds it very hard to sleep easily under his accumulated cares. There is no period of the year when he may said to be absolutely free from them, whether it be in the depths of winter, in the opening days of spring, or in the scorching suns of summer, he has his worries and anxieties. I think probably his best time is in the early autumn: there are no exhibitions to woo him away from his garden; the show boxes have all been cleaned and put away, and he does not care whether that fine bloom of Marie Baumann or Mrs. John Laing, over whose development he would have watched with much anxiety a couple of months ago, is open next day or next week. But what a time he has had of it this year! we had, it is true, a mild winter, but that brought with it its worries. Day after day he saw the young shoots of his Roses lengthening, and the thought occurred to him, "If this goes on, how will my Roses be about May 20, when that cold wave, whose evil influence we have so often experienced of late years, comes over us?" Then comes the time when he must look out for Rose-maggot and aphides. He has spent many a weary time in hunting out the former, and though it is not a pleasant occupation to pick him out and squash him, he knows there is no other way of circumventing the little beast. And now, after a little time of dry, warm weather, he sees the latter swarming on his trees, he knows their power of reproduction, and therefore must try and get rid of them. At first he is satisfied with the unpleasant task of passing his finger and thumb up and down the shoots, and so destroying his enemies; however, he will soon find that this is not enough, and syringing with a solution of quassia-chips or Gishurst Compound has to be adopted. He does not like it, for it somewhat spoils the foliage of his plants, but he has no alternative. Then, again, what is that he sees on that fine plant of Her Majesty? Can it be mildew? This pest does not affect the permanent health of the plants, though when present in any amount, it certainly disfigures them. But perhaps a more injurious fungus attack is that of the orange-fungus; it is also more troublesome to deal with, as it appears on the under side of the leaves, where it is, of course, very difficult to apply any remedy. In a very short time, the leaves fall off, and the plant is left completely bare; these attacks vary in amount in different seasons and different localities. They are generally ascribed to atmospheric influence (a most delightfully com-

prehensive term, which may mean anything). They form a great source of anxiety to a Rose grower, and it would be a great boon to find out anything which would prevent them. I hear great complaints of them this year, but, strange to say, up till now, the end of July, I have seen but very little of either mildew or orange-fungus on my plants. Where dwarf plants are grown which have been budded on the Manetti or seedling Briar, or more especially on the former, the grower has the anxiety that shoots may start out from the stock, and by the inexperienced may be taken for the Rose itself, until at last the grower is favoured with a large bush of Manetti which has overpowered and killed the Rose.

In a droughty season like the present, there are two sources of anxiety at this time—one is the difficulty of getting the plants in a good condition for budding, for if the bark does not freely rise, successful budding is almost hopeless, so when week after week the drought continues, the anxiety of the grower increases; the other cause for anxiety which the drought occasions is, that the shoots which are thrown up from the underground part of the plants, and which really are the foundations of his hopes for the next season, are very slow in making their appearance. I worried a good deal about mine last year, but then came a thorough drenching rain, just in time to start them off; they came of course late, and had there been a severe winter, such as we experienced two years ago, the effect would have been very disastrous—but as it was, the wood, though not so ripe as one would have wished, was still hard enough to resist the influence of the frost which we did experience, so let us hope that it may be so for the present season.

As I think of the disappointment experienced by all the fruit-growers at the disproportion between the splendid show of blossom and the fruit produced, I am inclined to think a great deal of this is owing to the same cause, namely, the non-ripening of the wood; as I have said, the anxieties of the Rose grower are less in the early autumn than at any other time, for if he has been careful to cut out the weak spindly shoots, which will never bear good flowers, he has very little more to think of, and may look with pleasure on his Teas and Noisettes, which are sure to be in bloom in the autumn, while he may expect some of the high-coloured Hybrid perpetuals to give him flowers which will form a pleasing contrast to the more delicately-tinted Teas.

In all that I have thus written I have made no special reference to the exhibitors of Roses—and who can measure the amount of their anxieties? If the exhibitor be ambitious, and wants to go in for as many shows as possible, I do not think that even a country doctor, with a widely extended practice, has a harder time of it than he has; for during the month beginning from the end of June and ending at the end of July, he must be prepared to do without sleep, except such as he can snatch in a railway carriage or in a waiting-room. He must be on the watch for an early start, and has instructed one or two on whom he can rely to awaken him in time. He must keep guard over his boxes, lest the porters with that charming inattention to all directions, when they see painted in large letters on the box, "this side up," deliberately turn it over the other way. Then, when they come to stations in the dead of night, and can get no access to an hotel, and the waiting-room is closed, all that he can do is

to place his boxes on the platform, lie down on them, and putting his bag under his head for a pillow, snatch a short but troubled sleep, awakened occasionally by a passing train, and obliged to get off to the show-ground as soon as he possibly can. He may come to the station at a very late hour, and knock up the innkeeper, who after opening the door, and seeing a reverend brother with others standing, and seeking for admittance, tells them that they ought to know better, refuses to hear any explanation, and shuts the door in their faces. Nor are these troubles only to be met with in country stations. It is no little cause for anxiety when an amateur comes to the low level at the Crystal Palace, and has to get his box up that long ascent to the central transept. I do not think our excellent president, Dean Hole, is ever likely to forget how some of us helped him up with his boxes at the first show held at the Crystal Palace. And when the exhibitor gets his boxes into their places, his anxiety does not cease: where is the bloom from which he hoped much?—there it stands staring at him, and he must change it. He goes for his box of "spares," and takes out a promising bloom and substitutes it, but he is so excited that he does not see that within a few Roses he has another flower of the same kind, and consequently his box is disqualified. It has, indeed, been seriously questioned whether, owing to this undoubted excitement and worry, and the mistakes engendered thereby, some relaxation of the rule regarding duplicates should not be made. There are, of course, cases where the duplicate may be intentional, but I think generally they arise from the excitement to which I have alluded.

Dean Hole has described in his charming Rose-book the condition of the disappointed exhibitor; but I do not think in these days, when Rose-judging has been so much advanced, that incorrect judging often adds to the worries of the exhibitor. There are some people who never can see that they are beaten. This, which is said to be the characteristic of the British soldier and sailor, is often that of the Rose exhibitor also; but, as a rule, he quietly acquiesces in a decision which is an unfavourable one. He does not think that the judges are in league against him, or that they are "duffers who do not know a Rose from a Cabbage." And now, as I have said, he may for awhile "rest on his oars," and put his anxieties and worries aside for a time. He may go off to the moors, or to the Dolomites, or, if he be an angler, to some favourite river; although in the latter case I am afraid, from what I hear, owing to the lack of water, he will have much worry. However, wherever he goes, let him come back with renewed vigour to face the worries and enjoy the pleasures of another Rose season. *Wild Rose.*

MR. MARTIN SMITH'S CARNATIONS.

THE first thing that strikes one on a visit to "The Warren," Hayes, is the unique disposition of the gardens. The estate borders on Hayes Common, an extensive piece of ground, covered with Brackens, Brambles, Heather (now in bloom), Wood Hyacinths, and other wild flowers that delight to grow on dry soils. From this common there is no visible means of division, so that from the lawns one catches charming glimpses between little groups of shrubs and Conifers, which are brightened by a foreground of flowering plants, of Nature unadorned beyond.

The arrangement is simplicity itself—the art that doth mend Nature.

It moreover comes as a pleasing surprise to find that Carnations, though first, are not everything. The kitchen garden is well cropped with vegetables of high quality; and here grows a large batch of Chrysanthemums, which Mr. Blick considers less strong than usual, but which appears to an outsider to lack nothing. Grapes, especially Black Hamburgh, Gros Colman, and Muscat of Alexandria, are fine, and in the orchard-house, in addition to Peaches well fruited, is a batch of vigorous Apricot-trees ripening a crop of large fruit. All these are growing in pots, and also in pots is a good collection of Pears and Plums growing outside, under the protection of a wire cage—an efficient though expensive method of keeping the fruit from the ravages of birds.

Carnations, however, are the supreme feature; house after house is filled with them, and outside are several batches that have either been condemned to destruction or set apart for border decoration for another year. It must not be supposed the latter are wanting in good qualities. One's feeling is, indeed, that they are good enough for anything, but they are simply crushed out for want of space, which is to be occupied by flowers of a superior quality. The healthy appearance and the abundant foliage of the Hayes Carnations have often been commented on, but no one, without a personal inspection, can realise how healthy and how abundant it is. The blooms, again, are all grown to the largest possible size; this is secured by leaving only a few buds to expand on each stem. Three plants are in each pot, and allowing an average of three blooms to each plant, we have nine to each potful. The effect of a houseful of blooms of such high quality—because, though the blooms are large, the quality is high—is extremely good. Up to the present yellow sorts, perhaps, are the most popular of the self-coloured section, and the finest of these is undoubtedly Cecilia, in shade soft, with petal broad and smooth, and the largest of blooms. Margaret of Anjou, clear in hue, produces a fine flower. On the other hand, Goldfinch is light in shade, pure in colour, and attractive. The Naiad is still lighter, almost straw-coloured, the bloom large and of good quality. Nor must we pass over the Hon. Judith Harbord, a very rich yellow and extra fine; nor Falcon, which is buff yellow and most distinct. Next in popularity to the above are those of which Mrs. R. Hole was not so long ago the sole representative. By far the most brilliant of these is Midas, burnished copper, which, though deficient in one or two of the points so dear to florists, is decidedly the finest of the darker-coloured varieties. I thought it one of the finest flowers in the collection, particularly from the gardener's point of view, as an effective variety for massing and for cutting. Besides this, the only other variety I noted in this section was Benbow, clear fawn in colour, the bloom not large, but of perfect form.

Though it may be said of white-flowered varieties they are endless, there are yet a few superior sorts; such for instance as Helmsman, a large and boldly effective flower; Robert the Bruce, a very pure and full flower, and the habit of growth very dwarf; and Much the Miller, large, pure white, and possessed of a petal perfect in form. Red-coloured varieties are not so rapidly passed over. Here we have not only many fine sorts, but tints differ so much in degree, and the form of the blooms are so varied, that a much larger selection has to be made than in the white kinds. Grand Duke, for example, produces a deep bloom with a splendid petal; Sir Bevis is brilliant crimson, and Ethelbert a clear bright crimson. Comet reminds one very much of the deservedly popular Mephisto, only the blooms are larger, and the habit of the plant dwarfer than in that fine variety. Scarlet forms are represented by Commander, which has a broad and deep bloom; Etna is very bright scarlet; and Conqueror, with large and very full flowers, is bright rosy-scarlet. Rose shades, like reds, are also very numerous, and a selection of the best is not easy to make. Sadek, one of the most popular of the Hayes Seedlings, is surpassed by Joan

of Arc, which strikes one as a fine improvement. Asphodel and Endymion are also very fine, while Flora is lighter in shade; and Euterpe, of a colour somewhat more pronounced, is altogether a fine flower. Orpheus cannot be passed, the bloom being large and of a clear rosy tint. In Miss Sophy Graham we have a very pretty flower, pale pink, reminding one of Campbell's Valkyrie, but much larger. Queen of Scots, large and fine, rosy-pink in colour, is notable for its emission of a delicious clove scent. Note was also made of Dick Turpin, amaranth in colour, and with a large and fine bloom.

From among the many fancy varieties the following are selected as the best. Many of them will be found invaluable by gardeners and others as producers of flowers for cutting, while as summer decorative subjects the plants are difficult, if not impossible, to surpass.

The most attractive of all is Hidalgo, a variety that secured much attention at the Crystal Palace. The blooms are difficult to describe, the coloration, as well as the form, being very distinct. The ground colour is a yellow tint, and the markings maroon, white, and light scarlet, the centre of the bloom being very dark.

In Persimmon we have another flower of great effect, and which by some will be preferred to the last-named. The colours are scarlet, slatey-blue, maroon, and lilac, arranged somewhat like the old bizarres, though, of course, the white ground is absent, and the colours are different. Ossian, with buff-yellow ground, barred rose-mauve and crimson-maroon, is another attractive kind. So also is Perseus, a beautiful flower for cutting. In Queen Bess, a yellow ground, with mauve and purple markings, we find a very fine sort. Britomart, a lovely variety, is striped rose and carmine, while Pagan, buff, suffused with mauve, is distinct and really beautiful. Charles Martel, a dark fancy, with yellow ground, almost covered with scarlet, is very bright. Those who know Prodrick, with its large bold flower and its harmonious colouring, will be able to conceive the beauty of Elaine, the two bearing some resemblance to each other. Heroine, a yellow-ground fancy, with rose and carmine markings, is a most attractive sort, and perhaps more so is Maid of Honour, an extra fine Apricot, ground marked with rosy-mauve, the habit of growth dwarf, and Duke of Alva, yellow-carmine and purple, presents a very attractive combination.

Yellow-ground Picotees are also grown in large numbers. Not a few of them possess with a distinct wire edge pure grounds without marking, but these being under the Hayes standard of size, are being grown on for breeding purposes only. Of those that will in due course be distributed, the following were noted as extra fine:—Carloman, with scarlet edge, and marked with the same colour; Goldilocks, a very charming sort, the bloom tipped lightly mauve and maroon; The Sphinx, buff-yellow ground; Prætorian, yellow, with mauve; Aglaia, primrose, with mauve, the flower very large; Edith, dark yellow ground, full flower, bright rose edge, and extra fine; Lily Duchess, a fine variety, yellow, with rose edge; Lady Bristol, yellow, with dark rose; Mohican, deep yellow, with scarlet edge, is of fine habit, and very free; Mrs. Tremayne, and His Excellency, the latter a very clear-coloured, fine variety.

Malmaisons were practically past. Gog, a "semi-Mal," brilliant scarlet, and Mrs. Martin Smith, darker and larger than the pink Malmaison, being the only sorts in flower. A houseful of show Carnations are also well cultivated. B.

ALTHÆA PRIMROSE GEM.

[SEE FIG. 30, p. 115.]

This very pretty perennial was raised for Messrs. Veitch by Mr. Seden. It is a plant like the Hollyhock, with large clear primrose-yellow flowers, which are very attractive. It was raised from *Althæa ficifolia*, fertilised by the pollen of a garden Hollyhock. It was exhibited at the meeting of the Royal Horticultural Society on July 26.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM SCHLIEPERIANUM CITRINUM.

THIS is a very pretty colour variation of the showy typical form which has yellow flowers, barred with brown. In *O. S. citrinum* the ground colour is pale yellow, and the bars and blotches on the segments of a darker tint of yellow instead of brown. It grows well with its allies *O. grande* and *O. insigne* in a tolerably cool house, a few degrees warmer than that in which *O. crispum*, *O. Pescatorei*, &c., are grown. A good example of it is sent by H. Cary Batten, Esq., Leigh Lodge, Abbot's Leigh, Bristol, who also sends a very richly-coloured *Læla tenebrosa*, the rather rare *Lycaste (Colax) viridis*, with pale-green flowers, bearing purple spotting on the petals, and *Lycaste cruenta*. J. O'B.

ODONTOGLOSSUM HARRYANUM SUPERBUM.

THIS variety, like most of the other members of the genus, varies much, and while all the varieties are pretty enough to grow, there occasionally appears a form which far surpasses the ordinary varieties in every respect. Such a one has been forwarded by H. Cary Batten, Esq., Leigh Lodge, Abbot's Leigh, Bristol. It measures nearly 4 inches across the sepals, the upper one of which is over an inch in width, and the lateral ones rather under an inch wide. The sepals and petals are of a dark purplish-brown, with a few narrow wavy yellow lines. The large broad labellum is orange at the base, claret-crimson, veined with yellow on the middle area, and primrose-yellow at the apex. J. O'B.

The following Orchids are figured in the last number of *Lindenia*, which completes the third volume of the present series, or the thirteenth volume of the whole work, comprising within its limitations a most serviceable series of plates. In the next volume we trust the Editor will dispense with the Roman numerals, and adopt others that do not take so long to read:—

ACANTHEPHIPIUM CURTISI, *Rchb. f.*, var. *ALBIDA*, *Lind.*, t. DCXIX. See *Rchb. f.*, in *Gard. Chron.*, xv., p. 169.—Distinguished from the original by the white perianth segments, flushed with yellow; the lateral lobes of the lip are pure white.

CIRRHOPELAIUM PICTURATUM, *Loddiges*, t. DCXXII.—A beautiful species, which Orchidists will be glad to see is being re-introduced.

CYPRIPEDIUM ROTHSCILDIANUM, *Rchb. f.*, var. *PLATYTÆNIUM*, *L. Lind.*, t. DCXXIII.—A form with remarkably broad petals, and truly one of the most striking of its race.

CYPRIPEDIUM WINCQZIANUM × *Lind.*—A hybrid between *C. Harrisianum* superbum and *C. Haynaldianum*, in the establishment of the "Horticulture Internationale," and dedicated to M. Arnold Wincqz. It is a handsome variety, combining the characters of both its parents.

DENDROBIUM TAURINUM, *Lindl.*, t. DCXXI.—Flowers white, segments twisted, spreading, violet-tipped.

ODONTOGLOSSUM CRISPUM, *Lindl.*, var. *MOOREANUM*, t. DCXXIV.—A variety with segments, white, traversed by a central rose-coloured line, and yellow at the margin; lip white, with a purplish-brown spot.

ODONTOGLOSSUM × *WILCKEANUM* var. *LINDENI*, t. DCXVII.—A magnificent variety, with stellate flat flowers, segments relatively narrow, lacerate, white, with large brownish-purple blotches. The plant is supposed to be a natural hybrid between *O. crispum* and *O. luteo-purpureum*.

PHAIUS NORMANNI × *O'BRIEN*.—A hybrid between *P. Sanderianus* and *P. tuberosus*. See *Gard. Chron.*, 1897, i. 245.

The plants figured in the eighteenth number of the useful *Dictionnaire Iconographique des Orchidées*, dated March, 1898, but not issued for some months after, are:—

CYMBIDIUM GRANDIFLORUM, *Griffith*. *Cymbidium*, pl. 5.

CYPRIPEDIUM TESSELLATUM *PORPHYREUM*. *Cypripedium hybridum*, pl. 14.

DENDROBIUM AINSWORTHII *LEECHIANUM*, *Cogn.* *Dendrobium hybridum*, pl. 1 A.

LÆLIA ANCEPS *HILLIANA*, *Rchb. f.* *Lælia*, pl. 4 C.

LÆLIO-CATTLEYA MYRA, *Veitch*. *Lælio-Cattleya hybridum*, pl. 10.

MASDEVALLIA CHIMERA, *Rchb. f.* *Masdevallia*, pl. 5.

ODONTOGLOSSUM CRISPUM *FRANZ MASEREEL*. *Odontoglossum*, pl. 1 G.

ODONTOGLOSSUM *HARVINGTENSE*, *L. Lind.* *Odontoglossum hybridum*, pl. 4.

ODONTOGLOSSUM PESCATOREI *LEUCOXANTHUM*, *Rchb. f.* *Odontoglossum*, pl. 2 B.

ONCIDIUM CAYENDSIANUM, *Bat.* *Oncidium*, pl. 11.

ONCIDIUM SPILOPTERUM, *Ldl.* *Oncidium*, pl. 12.

SCUTICARIA STREELEI, *Ldl.* *Scuticaria*, pl. 1.

SELENIPEDIUM CAUDATUM, *Ldl.* *Selenipedium*, pl. 1.

ORCHIDS AT THE POPLARS, REGENT'S PARK.

Passers along the Avenue Road, near Regent's Park, noting the massive gates of the pretty and commodious residence of Ludwig Mond, Esq., would scarcely suppose that inside those gates one of the prettiest natural gardens in the suburbs of London

sonal friend, and as much time as he can spare is spent in their company. The lofty Cattleya-house contains a very fine collection of Cattleyas and Lælias, comprising some large specimens of Cattleya aurea, which luckily flowered here out of an importation of *C. Warscewiczii* (gigas). More often than

mens of *Lælia purpurata*, with fine flower-sheaths; *L. tenebrosa* in bloom, and so also varieties of *Cattleya Loddigesii*, &c. At one end of the house are some strong *Cypripediums*, of which some, *C. Charlesworthii*, *C. cœnanthum superbum*, and others, are in bloom. Here, too, is a fine batch of *C. Spicerianum*,



FIG. 30.—ALTHÆA PRIMROSE GEM: COLOUR OF THE FLOWER PRIMROSE-YELLOW. (SEE P. 114.)

was to be found, and that in the glasshouses were cultivated in perfection a fine selection of the rarer showy Orchids. Great interest is taken in the Orchids by Mr. John O. Clarke, the gardener at The Poplars; and in his management of them the fact that the collection has been gradually formed under his guidance, goes far to account for their good condition, for each of the plants he looks upon as a per-

otherwise, however, the experience is reversed, and plants bought as *C. aurea*, on flowering, turn out to be *C. gigas*. *C. Mendeli*, *C. Schroderæ*, *C. Mossiæ*, including that charming light variety, *C. M. Mondii*, are all well represented, their new growths being of great vigour. In flower are some handsome *C. Gaskeilliana*, one specimen, still in bloom, having had a dozen fine flowers. Here also are many grand speci-

fast growing into large specimens, although [when bought they were very small pieces. Mr. Clarke pots all this class of plants of *Cypripedium* in stiff loam, mixed with fine crocks, and the pots soon become a mass of roots. On a shelf overhead is a splendid lot of *Dendrobiums* of the *D. thyrsiflorum* and *D. Farmeri* class, and throughout the house are many examples of very fine culture, especially noteworthy

being the large specimens of *Odontoglossum citrosimum*, and the plants of autumn-flowering *C. labiata*, which promise a good late autumn show. The stages are edged with *Ficus repens* and *Oplismenus Burmanni*; and the lobby at the end, which contains some valuable statuary, is brightened with *Cattleya Gaskelliana*, some noble spikes of that fine old *Odontoglossum hastilabium*, *Miltonia Roezli*, and *M. Roezli alba*, and other flowers.

The *Odontoglossum*-house has a large number of very healthy specimens, a few being in flower; and in the other houses, especially good were a fine lot of *Cymbidiums*, including a sturdy plant of *C. Traceyanum*; a very fine batch of the orange-coloured *Epidendrum vitellinum majus*, the dark rose-purple *Sobralia macrantha*, "Woolley's variety;" *Oncidium Lanceanum*, and other pretty species in flower.

The foggy winters in the neighbourhood of London render it specially praiseworthy to have such a healthy lot of plants in one's care as those Mr. Clarke so well cultivates; and the good crop in the vineries, and the neat condition of every part of the gardens, show that, with skill and care, not forgetting money, gardening may be carried out, even in the suburbs of London. *J. O'B.*

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 79 to 85.)

(Continued from p. 107.)

2, ENGLAND, N.E.

YORKSHIRE.—Apples are only an average crop in this district. Pears are only a thin crop. Plums are very scarce, Denyer's Victoria being the only one that has a crop. Apricots are carrying heavy crops, and are looking well. *A. E. Sutton, Castle Howard Gardens, Welburn.*

— The great promise of abundant crops of Apples, Pears, and Plums has not been fulfilled; the continued cold and lack of sunshine during April and May were the causes of failure in many places in this district. At Birdsall some varieties of Apples, viz., Keswick Codlin, Blenheim Pippin, Tower of Glamis, King of the Pippins, have fine crops. Pears on east and west walls are a thin crop, whilst some of the trees on south walls have good crops. Plums on walls and standards alike are a very thin crop, and the trees are infested with aphids, and require the insecticide syringe very much. Dessert Cherries on untrained trees are a good crop. Strawberries are excellent; plantations that were made last August of the following varieties are very good, viz., Black Prince, Noble, President, Royal Sovereign, Sir J. Paxton, Gunton Park. *Bailey Wadds, Birdsall, York.*

— The fruit-crop hereabouts is a very disappointing one, inasmuch as the show of bloom all round was as good as it was possible to be, and there were no frosts during the flowering; but strong, cold winds, accompanied by hail and rain, which doubtless caused the lightness of the fruit crop. Of Apples, a tree (standard or bush) here and there is carrying average crops, while others have not any fruits. The same may be said of Pears and Plums on walls. Standard trees and bushes are a complete failure. Plums are very badly infested with aphids. *J. Hughes, Wentworth Woodhouse Gardens, Rotherham.*

— On the whole, the Apple crop is a very partial one, trees of some varieties carrying good crops, and others have none. Many of the Apple-trees are infested by insects and attacked by mildew, which give the trees a dried-up and rusty appearance. Pears are a very thin crop, but the trees are healthy. The Peach, Nectarine, and Apricot-trees have an average crop, but owing to the cold winds and frosts experienced in the spring and early summer months, gumming and loss of branches is much in evidence. *J. Allsop, Dalton Hall Gardens, Hull.*

— The crops of fruit on trained fruit-trees on walls are an average, and so far the fruit is healthy and promising, whilst on standard trees and bushes it is in general very poor. All hardy fruit promised well in the spring, trees, bushes, and plants being covered with blooms, and I believe the constant

light rains, and cold experienced at night, prevented the bloom from setting, and killed the embryo fruits. *Chas. Shaw, Asket Hall Gardens, Roundhay, Leeds.*

— Fruit-trees blossomed abundantly, and during the early spring promised well. Not so much the frost but the continued cold winds just as the blossom was setting, were, I believe, the cause of the fruit-blossom failing to set. Many fruit-trees suffered from blight. *J. P. Leadbetter, Tranby Croft Gardens, Hull.*

— Judging from the quantity of bloom, and the absence of spring frosts hereabouts, we looked forward to a good fruit year; but as far as Apples, Pears, and Plums are concerned, the crops will be very light. The varieties of Apples which have set the best are Devonshire Quarrenden, Lord Grosvenor, Peasgood's Nonsuch, Cox's Pomona, Stirling Castle, New Hawthornden, Tower of Glamis, and Burr-Knot—the latter a never-failing cropper. The crop of small fruits is a heavy one generally, but late in ripening. *S. Upex, Wigganathorpe Gardens, York.*

3, ENGLAND, E.

CAMBRIDGESHIRE.—In the flowering season the fruit crop looked most promising all round with us, the standard Plums, Greengages, and Damsons being a beautiful picture when in bloom, and it was the same on the walls with Peaches, Nectarines, and Pears; but at the setting period the nights were frosty, with cutting east winds, which blackened all the blossoms, as it did those of the Gooseberry-bushes. Our soil is a heavy cold clay. The fly on the walls was the worst attack for many years past. *A. Burgess, Wimpole Hall Gardens, Royston, Cambs.*

ESSEX.—Apples are a good crop; in some cases varieties such as Lane's Prince Albert and Stirling Castle have required thinning. Pears and Plums bloomed well, but in consequence of late frosts they did not set well. Cherries set well, and carry good crops of fine fruit. Peaches and Nectarines are carrying good crops, which promise well, the trees not having suffered so much from blight as last year. Apricots are a good regular crop, fine fruit. Small fruits are an enormous crop, and very good. Strawberries are the heaviest crop I have seen for years, fruit well developed, and of good flavour. *W. Piper, Hylands Gardens, Chelmsford.*

NORFOLK.—The fruit crops here have turned out very disappointing, the Apples being very thin and the trees very unhealthy. Pears are better, especially early ones on the south wall, and Jargonelles, Flemish Beauty, Williams' Bon Chrétien, Gifford's Beurré are carrying good crops. Plums are very irregular: trees on an east wall have scarcely a fruit, whereas those on a west wall have a good average crop. Cherries are thin and very small and do not seem to swell as they ought. Peaches and Nectarines are a good average crop, but the trees are much blistered; small fruit is very plentiful and good. *H. Batchelor, Catton Park Gardens, Norwich.*

SUFFOLK.—Speaking generally, the fruit crop in this district is an average one. Strawberries were abundant, and of good quality. This year the fruit was fully a fortnight later in ripening. The following varieties were particularly good:—Noble, Royal Sovereign, Sir Joseph Paxton—still one of the best—and British Queen. Small fruits, with the exception of Gooseberries, are plentiful, but not good in quality. Currant-bushes have been much infested with aphids. Apples promise to be fairly good. *H. Fisher, Flinton Hall Gardens, Bungay, Suffolk.*

4, MIDLAND COUNTIES.

BEDFORDSHIRE.—Apples are a very good crop, clean and neat wood. Pears a very thin crop; the wood, however, is healthy and clean. Plums very scarce, but the trees healthy and making good wood. Cherries good average crop, but a good deal infested with black-fly. Peaches and Nectarines on unprotected walls clean and healthy, but they will be late in ripening. *G. R. Allis, Old Warden Park Gardens, Biggleswade, Beds.*

BUCKS.—The Apple and Pear crops are under the average in this district, and trees of the former are

much infested with aphids. The blossoms were abundant, but showed a weakness, probably caused by the partially-developed state in which the buds remained for about two months from the second week in March, previous to which the buds, especially of Pears, were almost ready to open, owing to the mild weather prevailing up to that date. The result was that the majority of the blossoms failed to set, or were so weak that they soon dropped off. A few varieties have cropped fairly well, one of the best being Lord Grosvenor, the best early Codlin. Peaches and Nectarines are a full crop, and much thinning of fruits has been necessary. Apricots about half a crop. Plums a good average on wall trees, but there are none on standard trees. *C. Herrin, Dropmore Gardens, Maidenhead.*

— Only a few varieties are bearing a good crop, although we had a good show of bloom. Plums are a thin crop. Apples and Pears also under the average. Strawberries good, and late ones very fine, such as Latest-of-All, Oxonian, and Elton Pine. *J. Smith, Mentmore Gardens, Leighton Buzzard.*

— The Apple crop is much affected with fly, and consequently the size of the fruits and the quality will be impaired. The Pear crop varies considerably this year in this locality; the condition now is satisfactory. Plums are very scarce; only here and there is a full crop to be found. Peaches and Nectarines a promising crop on Alexander and kindred varieties. Apricots very few, but fairly good in quality. Strawberries fine in general, that invaluable sort, Royal Sovereign, introduced by the late Mr. Laxton being superb as an early and good variety, and for early work especially, and good for other seasons and for general cultivation. Raspberries: the dry state of the weather seriously damaged this crop on light soils. Currants are much affected and damaged by fly. *G. T. Miles, Wycombe Abbey, Bucks.*

DERBYSHIRE.—The season for Apple, Pear, and Plum blossom, was the worst I ever remember during my twenty years' residence in this district. Practically speaking, we have no fruit, large or small, excepting Strawberries, the late frosts having played havoc with everything. The cold nights through June also caused great damage to foliage, and all trees are alike completely smothered with aphids. *Wm. Elphinstone, Shipley Hall Gardens, Derby.*

HERTFORDSHIRE.—The fruit season of 1898, although exceptionally late on account of the cold and sunless spring, has been better for fruit growers than the year of Jubilee. Strawberries, Cherries, and Currants promised magnificently in the earlier stages, and led to great expectations; but blight played havoc with Cherries and Currants, and the drought of July diminished the Strawberry crop, although the latter was much benefited by the rains of the end of June. Apricots were subjected to severe storms of sleet and snow when in blossom, but, thanks to the protection of nets, escaped without injury. Plums were nipped in the early stages, and consequently crops are scanty. Apple crops are good and plentiful, and expectations will be realised as regards quantity. *Wm. Garman, Frythesden Gardens, Great Berhampstead, Herts.*

— Apples, Pears, and stone fruit-trees gave great promise, blossom being most abundant, but during the setting period cold and wet weather prevailed, with frosty nights, and the results are with Cherries and Plums in many cases a complete failure. Apples are partial, some kinds, notably Laue's Prince Albert, Cox's King of Pippins on Paradise stock are being thinned. Pears on walls, and where protected, are an average crop; on bush and standard trees in the open very few fruits can be found. *Ed. Hill, Tring Park Gardens.*

LEICESTERSHIRE.—The fruit crops in this district are generally below the average, Apples, Plums, and Cherries are badly infested with blight. Fruits on walls are a good average crop, excepting the Plums. Apricots where well protected have fine crops, requiring much thinning. Gooseberries and Red Currants were badly infested with saw-fly grub, and also with aphids in places. *W. Silk, Rolleston Hall Gardens, Leicester.*

— There was an abundant show of hardy fruit-blossom. The long duration of cold north-east winds of May was disastrous to the Apple crop. The following varieties are, however, carrying full crops:—Annie Elizabeth, Bramley's Seedling, Frogmore Prolific, Seaton House, Bismarck, Lane's Prince Albert, Schoolmaster, Warner's King, Stirling Castle, Northern Greening, King of Pippins, &c. Pears on pyramids are thin, Louise Bonne, Williams' Bon Chrétien, and White Doyenné, being the best; wall-trees fruiting more abundantly, Apple and Pear trees being clean and healthy; Plum trees much blighted, particularly so Damsons. *D. Roberts, Prest-wold Gardens, Loughborough.*

— Apples flowered abundantly, but only the surest-bearing kinds, such as Bramley's Seedling and others, have a crop; many trees have not any, and all are much infested with aphides, mildew, &c. Pears flowered well, but did not set a full crop; they are clean and healthy, but the fruit will be late in ripening. Plums on walls have a fair crop, but have suffered much in the foliage from insect attacks; standard trees are without fruit. Damsons are also a failure. Peaches have a good crop, and are clean and healthy. Apricots set a heavy crop, and are doing well. Strawberries are large and good, and a good crop; a few of the flowers were destroyed by frost on June 15, when the thermometer registered 28°. Gooseberries are clean, and a good crop. Currants a heavy crop. Cherries set a heavy crop, but many of the Morellos have fallen, owing to incessant attacks of black aphid. Filberts also are full of aphides. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

— All standard Apples much below the average, dessert: Pyramids over good, including Cox's Orange Pippin, Ribston Pippin, Pike's Pearmain, Rosemary Russet, Braddick's Nonpareil, Worcester Pearmain, Beauty of Bath, Waterloo, and Stanton Besspool; cooking: Duchess of Oldenburgh, Frogmore Prolific, Lane's Prince Albert, Newton Wonder, Peasgood's Nonsuch, Bramley's Seedling, and Stirling Castle. *Alfred Hamshire, Beaumanor Gardens, Loughborough.*

NORTHAMPTONSHIRE.—The season that promised to turn out well has practically turned out a failure. Nearly all fruits showed well, but cold winds and cold rains brought on such a deal of blight, and the hailstorm, June 28, caused the fruits to fall from the trees, such as Apples and Pears. The Peach-blister has been very bad. *H. Kempshall, Lamport Hall Gardens, Northampton.*

OXFORDSHIRE.—Apples, although the trees were blighted a good deal, are a good crop, and a marked improvement on last year. Pears are very promising on walls, especially on cordons; on pyramids and standards they are not so regular. Plums: the foliage and young shoots were blighted and curled a good deal, but we have an average crop; Victorias are very heavy. Cherries are the worst crop; it has been most difficult to deal with the black aphid. Morellos, which generally do so well here, will be much below the average. Peaches and Nectarines are good; the blister that crippled them last year has hardly made an appearance. *George Stanton, Park Place Gardens, Henley-on-Thames.*

SHROPSHIRE.—Apples are plentiful in places, in others more or less scarce. In my own case, I have a fine lot on trees planted ten years ago, and which comprise the following varieties:—Cox's Orange Pippin, King of the Pippins, Bramley's Seedling, Lane's Prince Albert, Pott's Seedling, Hawthornden, Tom Patt, Waltham Abbey Seedling, Ribston Pippin, Dumelow's Seedling, Nonsuch, Scarlet Crofter, &c. Peach and Nectarine trees are sadly blighted, and crop very partial. *F. S. Kemp, Broadway Gardens, Shifnal, Salop.*

— Plums on wall-trees only are heavy crops. Apricots began to bloom the last week in February, which is earlier than I ever knew them. Peaches began to ripen early, I gathered the first of Alexander and Waterloo from the open walls July 11. The following Apples are bearing the best crops: Blenheim Pippin, Orange Pearmain, Ribston Pippin, Brownlee's Russet, Winter Greening. *G. Pearson, Attingham Gardens, Shrewsbury.*

STAFFORDSHIRE.—The prospect of an abundant crop of most kinds of hardy fruit at the beginning of March has been falsified. The long spell of uncongenial weather which was experienced, commencing as it did at the beginning of March, and continuing, with very few exceptions, until the end of May, upset most of our hopes. Although we have not had such severe frosts this season as in some years, still I think the extreme cold wet weather for such a long period was more generally destructive. This season scarcely any kind of hardy fruit has wholly escaped the bad effects of the bad weather. Of Pears some few varieties have enough left to make a middling crop, while others, such as Williams' Bon Chrétien, Marie Louise, General Todtleben, Duchesse d'Angoulême, &c., are fruitless. Curiously enough many of the trees thus stripped are now showing quite white with a second lot of blossoms. Pear trees on walls escaped the effects of the cold winds, and in most cases are carrying fair crops. Apples, I think, have suffered more than Pears, the large orchard trees, with one or two exceptions, having scarcely any fruit upon them, although in their season the trees were covered with fine healthy blossoms. Young standard trees, about 100 in 50 varieties, which have been planted six or seven years, and in a rather exposed position have, on the other hand, been able to retain a very fair crop. Trees of Lord Suffield and Duchess of Oldenburg in one garden are carrying a medium crop of fruit, while similar varieties growing a little distance off in another part of the garden have scarcely a fruit left, notwithstanding the fact that the former are in the most exposed position. Espaliers and cordons generally are more satisfactory, Scarlet Nonpareil being the only variety out of twenty-four which has entirely failed to set any fruit. Plums and Damsons, which failed last year with us, are again in a similar plight, not one out of the many varieties having more than a stray fruit or two on, although previous to the cold storms the trees were white all over with blossom. Sweet Cherries have middling crops, while the Morellos are well laden with fruit. Apricots, although well protected with shading material, have set but a poor crop, while Peaches and Nectarines are a complete failure. Portugal and Pear-shaped Quince-trees growing together, and both varieties well furnished with blossom in their season are now showing very different results; for, whereas the trees of the first variety have set a full crop, the latter has scarcely a fruit to be seen. Medlars are also well furnished with fruit. The various kinds of bush-fruit present a much better appearance as to fruit than could reasonably have been expected, as during the time they were in bloom we were experiencing very sharp winds and frequent snow-storms, with several degrees of frost at night. Gooseberries are a very good crop. Red and white Currants ditto; while the trees of the black varieties are so heavily laden as to necessitate the looping-up of the branches. Strawberries look very promising, although late, Laxton's No. 1, the earliest variety we grow here, having a few fruits ready to day (June 28); Royal Sovereign and Gunton Park have set large quantities of fruit, and are swelling up well, so also are the later kinds as promising, especially Latest-of-All and Waterloo. To show the lateness of the season compared with 1897, I find we are fully three weeks later in obtaining runners this year than last. Raspberries are setting a heavy crop, the earliest fruits showing well. Blackberries have pushed out strong fruiting laterals, and from which we shall expect to gather large quantities of useful fruit in due time. *Geo. Woodgate, Rolleston Hall Gardens, Burton-on-Trent, Staffs.*

— I think I never saw Apple and Pear trees so full of bloom as they were here, and I have very seldom seen so thin a crop of fruit. King of the Pippins on the Paradise stock is the best cropper we have; we have a fair crop of Lane's Prince Albert and Manx Codlin. All other varieties are very thin indeed, and most of the fruit was severely bruised by a hailstorm we had, on June 18, and still show the effects of it. Gooseberries are a heavy crop, so are Currants; Strawberries a fair average crop; Cherries and Raspberries are very poor. *J. Wallis, Keele Hall Gardens, Newcastle, Staffs.*

WARWICKSHIRE.—From the promising appearance of the trees in early spring we anticipated an extraordinary fruit year, but our hopes were again doomed to disappointment. The cold weather in the early part of May, and less or more up to June 15, when we had 3° of frost, settled the bloom or embryo fruits on many trees and bushes. The very late flowering Apple, Court Pendu Plat, which we thought had passed safely through, was caught by the June frost, with the result that the trees are almost fruitless. Apricots are thin, but the fruit now maturing will be very good. Plums, after throwing a profusion of blossom, are perhaps the most disappointing of all. Apples are but a partial crop, but on a few trees planted in 1889 there are a few redeeming points; these are King of the Pippins, Kerry Pippin, Ribston Pippin, Blenheim Orange, Keswick Codlin, Schoolmaster, Cellini, Dutch Mignonne, Reinette du Canada, Northern Spy, Small's Admirable, Prince Albert, and Lemon Pippin. Pears are much less satisfactory, and although there are a few swelling off, they are not good enough to call for any special note. Dessert Cherries have been very good, but much affected by black-fly. Our altitude is 250 feet above sea level. Soil, a healthy brown loam on the red clay formation of the district. *W. Miller, Coombe Abbey, Coventry.*

(To be continued.)

SOME DEVONSHIRE GARDENS.

HAMSLADE HOUSE.—Some excellent blooms of *Romneya Coulteri* and other rather rare herbaceous plants were recently shown at the Bampton Horticultural Society by Mr. James, gr. to — Macalister, Esq., Hamslade House. These were not in the competitive classes, but were specially commended, and much admired. Ascertaining the plants whence they were cut were within a reasonable distance, I made a journey on the following day, and was well rewarded for my journey. I was taken over the whole of a delightful garden by the proprietor and his wife, and had the pleasure of seeing many choice plants in a satisfactory condition. Alpines and herbaceous plants are largely grown, and as the ground is of an uneven character, it lends itself readily to the formation of beds, rockeries, snug nooks, and spots just suitable to herbaceous and alpine plants.

The plants of *Romneya* at Hamslade are so placed that they are protected from cutting winds, and the soil is light and porous. One plant is 6 feet 9 inches in height, 6 feet through, and has over thirty leading shoots, with over 200 flower-buds yet to open. In one year 180 blooms expanded, last year 300, and this year the latter number will probably be exceeded. I had never seen such a plant, nor imagined it could be grown so strong, and flower in such an abundant manner. Here it was in health and vigour, like a rampant-growing *Delphinium*. The lovely white satiny petals fully expanded, and tuft of yellow stamens, stamp this as a flower of uncommon excellence; and since it can be grown so well in favourable spots, I trust others will secure a plant, and grow it as successfully.

Another plant in a border close by was *Eremurus robustus*, now gone out of flower. The plant had been very fine, as was apparent by the remains of the six flower spikes, seven feet high, bearing round seed vessels. Close by was *Scabiosa caucasica*, covered with its pale blue flowers, whilst the *Phlox* and *Delphiniums* were robust and floriferous to an unusual degree. A large number of varieties of Sweet Pea were also in flower, and as each is kept separate the distinctness and purity of colour is retained. In the greenhouse were fine plants of show and zonal *Pelargonium*, furnished with very fine flower trusses. Standing among these were several plants of the rare African daisy, *Gerbera Jamesoni*. The flowers of this plant were shown at the meeting of the R.H.S. on March 9, 1897. This year it is flowering very freely again, and will continue to produce flowers till later in the season. I send a bloom for your inspection. The long flower stalk and singular star-shape flower of a deep red, stand well above other plants. *Cypripedium*

spectable and *Calceolus* in the rockwork were very strong, and had recently gone out of flower, and some two months earlier, when the Alpines and rock plants were blooming, this part of the ground must have been very attractive. I was greatly interested in what I saw, for the lady had every plant's name immediately at hand, and some incident in many cases connected with its acquisition and earlier attempts at successful culture.

MIRAMAR, EXMOUTH, THE SEAT OF J. GORDON, ESQ., is situated about a mile from the sea-coast on high rising ground, and in the vicinity of a number of recently-erected villas, which add much to the importance of this pleasant sea-side town, many of the houses being in the occupation of business men who journey backward and forward to Exeter, finding in these pleasant scenes a great relief from the dust, bustle, and oppressiveness of days spent in the city. From this spot the English Channel is in full sight, and the sea views obtained on the south Devon coast are often uncommonly beautiful. The mildness of this spot during the winter is such that many tender things will remain out in the beds, and suffer no harm whatever. I saw a few days ago on the lawn a grand plant of *Phormium tenax* that had stood a number of winters unprotected. This was now in flower, and had produced twelve spikes some 8 feet in height, flowers of singular form and colour, each being perfectly developed. Standing apart from all other plants, this had a quaint yet singularly interesting appearance.

In a border close by, a grand mass of bedding *Pelargonium* was in full bloom. These were planted some fourteen months ago, had remained unprotected all the winter, and were literally a dense mass of bloom. The same may be said of some *Verbenas*; so early to see large spaces of border covered with the rosy-pink, purple, or crimson colour of these was a pleasure. *Lilium lancifolium album* in the *Rhododendron* beds were well advanced, and would shortly be in flower.

In the conservatory adjoining the mansion, among other useful things were two immense plants of *Doranthus Palmeri*, and at one end a large portion of the space was covered with the old *Pelargonium*, Rollisson's Purple Unique. This had not come under my notice for many years; once again to see its pale purple clusters brought up memories of a firm now no more.

In the kitchen garden, which, however, is not large, a capital lot of cordon fruit-trees were well laden with fruit, a number on an archway being thinned just at the time of my visit. Capital pyramid Apple and Pear-trees were in most cases bearing good crops, Thompson's, Doyenné du Comice, and Van Mons. Léon le Clerc, among Pears, being especially good.

In the several glasshouses were good plants of *Cattleya gigas*, one with ten flowers, others with but one or two less; some well-flowered *Cattleya Warneri*, *C. Mossiae*, and others; *Lælia purpurata*, the pure white *S.* and *P.* form; *L. tenebrosa*, a variety of deep colour; *Cypripediums* in variety; and well above many others was the old but beautiful *Oncidium flexuosum*. Among Ferns, Mr. Ide, the gardener, has some excellent specimen *Adiantums*; and a plant of *Gymnogramma chrysophylla* measures just 6 feet through.

Passing out of these grounds, I was arrested by a fine specimen of *Benthamia fragifera* full of flower, an object seldom seen, yet most beautiful and attractive. The absence of rain, however, is already causing many plants to show signs of giving up. Some good showers will give a fresh face to everything, and carry flowers and plants well through the season.

STANDARD PEACH TREES.

One is so accustomed to see Peaches and Nectarines grown where support can be given to every branch and shoot, either by fastening to walls by nails, or by tying on to wired walls and trellises, or as espaliers in the centre of fruit-houses, that the thought of growing them as standard trees seldom enters into the mind, and the opportunity of seeing them growing so still less often presents itself. One such, however,

came to me a few days ago, for being in the neighbourhood of Exeter, I was induced by a gentleman knowing the district well to visit the gardens of the late Dr. Woodman, now in the occupation of F. R. Hearn, Esq. As this garden had been connected with the previous occupiers, Messrs. Lucombe, Pince & Co., it is hardly necessary to say more than that every part of the garden was in excellent keeping.

Standard and pyramid fruit-trees were numerous, and bearing good crops of fruit. Among the Apples I noticed a fine tree of Cornish Gilliflower, full of fruit. Some in this district contend that this Apple cannot be depended upon for fruiting if the spur system of pruning is adopted; true, there are those who merely thin this tree, and leave the lengthened shoots, at the extremity of which the fruiting-buds mostly appear. In the case of the tree in question, the gardener, Mr. G. Hanning, prunes rather severely, and secures the shoots on short spurs; there are at present such clusters of young fruit that it is evident, in this case at least, the right method is adopted. The same may be said of Ribston Pippin, full of fruit, and the trees remarkably free from cancerous growths.

Just at the entrance to the Peach-house I noticed a large plant of *Aralia Sieboldi variegata*, full of vigour, the variegation being very marked. This plant had stood in its position for a number of years, and has had no protection at all during the winter-time. It certainly had stood all kinds of weather well, and is now as healthy as it is possible to be. We then passed into the Peach-house, and truly a remarkable sight presented itself. The house is about 60 feet in length, and 14 feet in breadth, and the same in height. A number of Peaches and Nectarines are grown on the back wall, and a row of Tomatoes on the front of the house on a low stage. The Peach-trees, of which I think there are ten, were originally, some twenty years ago, I should suppose, grown in pots, and stood on the middle-bed, fastened to pillars in the centre of the house. Through the changes of occupancy and other causes, these have remained in their places, the roots working through the pots. Afterwards, these were broken, and soil put around them, into which the roots quickly entered. The original pyramidal form was soon lost; and now veritable trees, just 14 feet in height, with branches wide spread, so that as one passes through the house, a fair amount of stooping must be exercised, otherwise, one's head will come in contact with branches literally laden with fruit. There are now on these trees hundreds of fine fruit, and if not quite so dark on the outer skin as those grown on front trellises, where, by the pushing aside of the leaves, and consequent exposure to sunlight, a deep rosy tint is spread over the uppermost side, still, on these trees the fruit is of capital size and excellent flavour, those on the higher branches at least as good in colour as the most exacting could desire. Dymond was just finished; of Royal George, two or three trees were so laden that the branches were suspended with thick cord from the roof, or the weight would break them off. Early Alfred, as full as any; whilst that delicious though seldom seen variety Sulhamstead was as densely covered as any. Truly, a lot of which one might be proud, and ere I left I had the pleasure of congratulating the proprietor on his success, and trust it may be the same for many years to come. W. Swan.

MARKET GARDENING.

HARDY FRUITS.

(Continued from p. 90.)

APPLE-TREE PLANTING.—Having fixed on a site we may now proceed to plant it. Here a caution is most necessary, many good trees are ruined by careless and deep planting; many growers to save trouble and expense in staking, &c., bury their trees, this more than anything induces rank growth, and as a consequence unripe and barren wood. I would rather see the fork of the roots where it joins the bole left above the surface than buried. Indeed, in wet cold soils I universally

advise the surface-soil to be gently forked up, and the roots of the young tree to be spread upon this previously forming a small mound, like a mole-hill, and then add little by little some good fresh soil, with which a little well decayed manure has been incorporated, to be heaped up over the roots until efficiently covered giving the tree a gentle shake so as to settle the earth around and among the fibres. Then all may be gently trod up, but do not prune at first planting, except to remove any broken or bruised shoots. Stake at once so that the tree be not injured by the winds of winter, for planting should be done early in November, even if the foliage has not all been dropped, as planting a tree then you may tell it to grow, but later you must ask it—as the old saying goes. The stake should not be inserted nearer than a foot from the base of the tree, and should be so placed that it forms an acute angle with the stem. But the above is an exceptional thing, as a rule young trees want planting. To prepare for this, remove all coarse tap-roots; and any that have been injured by lifting at the nursery should be taken cleanly off by a sharp knife. Now dig the hole, taking care that it is quite large enough to contain the roots without cramping them. I have found it an advantage to form a little mound of soil in the centre of the hole, to occupy the fork of the roots, and so allow the small fibres to float evenly round, and occupy the space allotted.

Now add some of the finer soil, and with a stick work it well among the roots, adding a little at a time, and when the roots are covered, just gently shake the tree, before finally treading up, that the spaces not filled with soil may be so occupied; then mix some well decayed manure with the remaining soil, fill all in, and then gently tread up. Finally stake and tie, using two stakes if the situation be at all exposed to strong winds. After this little more is needed but just to keep an eye on the young plantation, to see that the wind has not shifted the stakes, or shaken the ties loose. Note, I do not advise any swathing material to prevent rubbing, as this so often harbours injurious insects, or their eggs, but use three-ply jute tar-cord, which is soft and yielding while at the same time it is strong and effectual.

Remember that starting well and fair ensures half the victory in most cases. Distance from tree to tree must vary with the kind cultivated, but for standard Apples on grass 20 to 24 ft. apart is ample, taking about ninety trees to the acre, while the intermediate space can be occupied for a time with bush-fruits, or Strawberries, removing these as your trees get large enough to fully occupy the allotted space, but whatever the undercrop taken, use great care not to approach the permanent trees too closely, or to cultivate too deeply. Never prune when planting, but leave the tree as it comes from the nursery, merely taking off cleanly any broken or bruised shoot at the time the roots are attended to. And if you wish to make a finished and slightly job, do not attempt a mixed orchard, that is, if possible, plant a complete row of one kind, for it must be borne in mind that the habit and growth of various trees differ quite as do the shape and colour of the fruit. By no means act as did a friend of mine, a road-surveyor, who being desirous to plant all his trees to one dead level, placed some on the surface, and buried others some feet below the ground-line!

Trees have their individuality, like human beings, some growing erect and compact as the Kerry Pippin and Worcester Pearmain, while others are pendulous and spreading—instance, Cellini Pippin and Yellow Ingestrie, called by Londoners Golden Pippin. Again, some trees are vigorous, others of slow growth; this I have found determined by their early and free cropping habit, which tends to arrest growth. Finally, a characteristic of some kinds is to produce most of their fruit on the ends of the branches, in which case a merely moderate wind, when they are maturing, threshes them down, or so bruises them that they are not fit to market, Lord Suffield and New Hawthorden being two among many that occur to me; while others make most of their fruiting-spurs along the sides of the main branches, as does the grand new kind which came to us from the Antipodes—"Bismarck." In this case the fruit is very much protected from wind, and also much shaded

ch must not be forgotten in pruning, and will be en under that head.

The following year—March to April—the young es may be pruned-back; one golden rule for this endeavour to form your tree, whether a standard a dwarf, with an open and cup-like head, as this ures a maximum of sunlight finding its way into and so gives you good ripe wood, a most portant factor in successful fruit-culture. Take the young shoots of your tree, therefore, so t you secure an outside bud, just above the cut, l remove altogether any thin weakly wood, any shoots that have a tendency to occupy the

to be laid down with safety. The chief thing is to endeavour to form your tree before you let it fruit, or this important result may be retarded, or even in some cases altogether delayed, and your trees become prematurely old and stunted, this being too frequently the case with early-fruiting kinds, such as Mr. Gladstone and Worcester Pearmain, both the Hawthorndens, Stirling Castle, and Ecklinville Seedling, which are so precocious that they may often be seen fruiting in the nurseries on 2-yr., or in rare cases, 1-yr.-old wood from graft or bud.

Before giving a list of the sorts I advise to plant, let me say a few words about marketing. In Kent

ditions requisite to induce the insidious disease commonly called canker, as well as giving lodgment for another Apple-tree pest, the American-blight (*Aphis lanigera*). Therefore do not hand over your first two or three crops at any rate to their tender mercies, but let your own men, or women (for this work is well done by the latter), carefully gather the fruit. *Experience.*

(To be continued.)

HIPPEASTRUM VITTATUM.

OUR illustration of this plant—otherwise, *Amaryllis vittata*—fig. 31, was prepared from a photograph, obligingly sent us by Mr. H. W. Gray, head-gardener at Hempland, Lowestoft, Suffolk. It is the best and most floriferous of the old species grown in gardens, very sweet, and by far better for decorative purposes than the expensive few-flowered new varieties. The flowers are white, with a red band on each segment. The sender tells us that the plant has flowered as profusely as is seen in the picture for several years past, and it has remained undisturbed in its 10-inch pot for some years. There are four flowering-bulbs, seven scapes, and thirty-eight flowers. The species is figured and described in the *Botanical Magazine*, t. 129.

LATE STRAWBERRIES AT MAIDSTONE.

IN continuation of my former notes (see p. 53), I proceed to report on the later kinds of Strawberries grown here; and my remarks on Eleanor and Elton Pine being most reliable have proved correct. Some three weeks of hot, drying weather has tried the beds very much, and those varieties which can endure such a trial are especially valuable. Elton is rather sharp in flavour, but its bright colour and grand crop make it valuable, and sugar is cheap; while, being red all through, it is a grand fruit for bottling or making jam. Eleanor produces a profusion of large, handsome fruit, and though acid, is very pleasant with sugar. Both these do best on rather heavy soils, and special pains should be given to these and all late varieties of Strawberries, by an extra heavy mulching and copious applications of water, with some fertiliser added, before the fruit swells finally. This extra care will then secure some handsome fruit at a time when the hot weather makes it doubly acceptable.

Aberdeen Favourite is a coarse, bright-looking fruit, of use where quantity is desired for cooking or making ices, it being a free bearer. New Dumbarton Castle has proved a splendid mid-season fruit, of excellent flavour, and being a round berry, it ripens well, and is an admirable variety. Waterloo is giving a few large fruits, but is never a heavy bearer here, but its blackish fruits are handsome; still, I do not think that when the newer kinds raised from it are plentiful, we shall require to grow it. Latest-of-All has been very good; indeed, its only defect is the green point, which takes so long to ripen that the berry loses flavour. Under a cool wall, where it can be netted, it is of better quality than where fully exposed; it, however, requires high culture. It is a pity that its name is Latest, as it misleads buyers, there being several later. Countess has done very well, and holds out yet. Veitch's Perfection has given a few highly-flavoured fruits, but we are of the opinion that Carmichael's crosses will supersede it, as they, under the same treatment, are two or three times as vigorous and of equally fine flavour, enormous croppers, and much larger, even when no special care or manure has been granted them. Newton Seedling deserves the Award of Merit it received. Although the flavour is not first-class, its crop and late bearing make it a desirable sort; even in light land the plants are 2 feet across. Frogmore Late and Filbert Pine are for flavour indispensable, but the latter requires less care in culture. Walluff is promising as a half late kind, but it would only be appreciated by those that like a fruit with some acidity.

A word now as to Mr. Carmichael's crosses. Although the raiser does not consider W. Carmichael worth



FIG. 31. HIPPEASTRUM VITTATUM: COLOUR OF THE FLOWERS WHITE, WITH A RED STRIPE ON THE SEGMENTS.

centre of the tree. After this but little more life-work will be needed, but the trees must be overlooked from time to time to see that the branches are free, and not crossing or rubbing against others, as this will surely induce canker and other ills that are fatal. The second year, if all has gone well, the number of shoots to shorten or remove will be more than doubled; but these may have more buds left, say, from five to seven, according to the vigour of the sort operated on, retaining an outside bud as before. I am not a great advocate for such pruning of orchard standards, and therefore say, after this leave Dame Nature to do the rest. Many may demur at the waste of time and labour, but let the fruit-grower make his own decision as to this, as I fear there is no invariable rule

and Sussex, where the Hop oasts afford a ready-made and convenient storage, it no doubt pays best, especially in certain seasons, to store and wait for a favourable market; nevertheless, as a rule, it will answer to gather the fruit, just as it approaches maturity, and to at once pack it and consign it to your salesman; or even a better plan is to sell your fruit on the trees (which is the rule in Kent) to a fruit-dealer, either by auction or privately, and so let him bear the expense of providing baskets, gathering, and marketing the fruit. The drawback to this is, there are unscrupulous buyers to whom you may sing in vain, "Dealer, spare that tree," for in their hurry to get off the fruit many will break and bruise the branches of your trees without compunction, thereby providing the con-

keeping, with me it is a remarkable bearer, of intense, full hautbois flavour, and on a poor piece of land the fruit is of fair size and, I think, far better than Filbert Pine; but it will be further tried. The fruit, of orange-red colour, is produced on long trusses. In Queen of Denmark we have a grand addition; the habit is close and vigorous, and it crops enormously and successively. Its fruit is small to middle size, black, with brown seeds, and its appearance does not recommend it; but culture will make it pay, and next year we hope for larger fruit. Its flavour is exquisite, and Veitch's Perfection will, I believe, take second place by comparison. Britannia (Carmichael) is more nearly like Waterloo, but a better grower, fine in flavour, and a free cropper. This was also on poor land. I think that with cultivation this variety will take a front place as a very late bearer. These three novelties are not yet in commerce, but Mr. Carmichael kindly sent me trials; his Richard Gilbert, as shown at the Royal Horticultural Society, was very large, but I and others considered it to be a reversion to Competitor, which has been discarded as too soft and flavourless for culture. *George Bunyard.*

FLORISTS' FLOWERS.

CARNATION ISINGLASS.

THIS is the very fine rich, deep scarlet variety for which Mr. Salter, Mr. T. B. Haywood's gardener at Reigate, so readily obtained an Award of Merit at the Drill Hall on July 26. Being in the neighbourhood on the 30th ult., I called in at Woodhatch to see the variety at home. I found it better in pots under glass in very brilliant form, and by scores planted out in beds in the garden. Those who eventually obtain plants may be assured that they will get a very sturdy, robust variety of first-class border habit, giving plenty of grass as well as bloom. Indoors, the average height is 2 feet; outdoors, about 20 inches. The flowers are exceptionally large for a variety that does not burst its calyx, and has such fine broad petals and form. Without doubt, amidst the shoal of novelties that is constantly cropping up, for seedling Carnations are now produced annually by hundreds of thousands, though few may be the first-rate ones, this brilliant scarlet is one of the very finest. That it will be in great demand for market culture there can be no doubt. It is well worthy of a more fitting name. I learn that the stock, which will be a considerable one, if time can be spared to get all layered, will be divided between Messrs. J. Veitch & Sons and Messrs. G. Bunyard & Co. There is both indoors and out at Woodhatch a fine collection of named Carnations, amongst which the Yellow Germania is prominent, and still seems to be the very best of its colour. The soil is here naturally sandy, and Carnations seem to like it. In another garden near, there are hundreds of plants flowering profusely, and the borough of Reigate now has its Carnation Society and annual exhibition. *A. D.*

AMERICAN NOTES.

THE ASPARAGUS RUST.

ASPARAGUS has not been subject to serious fungous diseases in this country until within the last two years. In September, 1896, however, Dr. B. D. Halsted, of the New Jersey Experiment Station, sent out a circular calling attention to a serious outbreak of the Asparagus-rust in his State. This was found to be caused by a fungus, *Puccinia asparagi*, described by De Caudolle in 1805, and said to be quite common in certain parts of Europe. It had not been found in America previous to 1896 except in one case, and that was in California; or at least, if it had been found, no record was made of the fact. Since Dr. Halsted's circular was issued, the disease has been recorded in Massachusetts, Connecticut, Maryland, and Rhode Island; and I may add here that I collected it in Vermont about a year ago. I found it the first time I looked for it, and doubtless the fungus is now quite widely distributed in America.

This rust seems to be a serious disease, causing very considerable damage, especially in the large Asparagus-growing neighbourhoods about New York and Philadelphia. Some growers are so much alarmed as to fear they will have to give up Asparagus culture. But so much concern is doubtless unwarranted. After growers have learned how to treat this disease, as they have learned how to combat others, it will not make much difference in the regular garden operations. Extensive spraying experiments with Bordeaux Mixture at the New Jersey Experiment Station succeeded in reducing the amount of rust about one quarter. Dr. Halsted also reports the discovery of two natural enemies of the rust-fungus, namely, *Darlucula flum.* Cast., and *Tubercularia persicina*, Ditt., both of which he thinks will assist materially in checking the progress of the rust. *F. A. Waugh.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Lælias.—The plants of *Lælia autumnalis*, *albida*, *Gouldiana*, and *furfuracea* should be encouraged to grow and to complete their growth quickly, and then be removed to a comparatively dry, cool and well-ventilated glass-house; or, failing that, to a light position near to the glass in the *Odontoglossum*-house. With proper attention as to affording water, &c., the plants will make a large quantity of roots. These growing *Lælias* require water, heat and moisture to be gradually increased, and as they delight in sunheat this should be afforded abundantly, providing the house be well ventilated at the same time; and when the blinds are removed early in the afternoon the foliage should be well wetted with the syringe. Under such treatment the plants make stronger growths than when grown in a close atmosphere in a shady house. Shade is necessary only during the hottest hours.

L. maialis is a beautiful species belonging to this section, and one that is found difficult to manage by some cultivators. Coming as it does from a greater elevation than the preceding varieties, it demands a lower degree of heat, and the intermediate house is the most suitable place for it whilst growth is being made, and the cool house when at rest, but it should be exposed to as much sunlight as is practicable at all times.

Dendrobiums.—Attention is now required by the deciduous and half-deciduous species, as the time is now approaching when many of them will finish their growth. It is often from lack of knowledge of the requirements of the plants at this time that failure to bloom the plants satisfactorily is due; and where many *Dendrobiums* are cultivated, it never happens that all of them at the same date have finished their growth for the season. Hence the need of selecting those that have done so from the rest. This will be known by the end-leaf at the top of the pseudo-bulb or stem having expanded; and these should be placed in a side of the house where plenty of light and air can be admitted, less moisture being afforded them. The blinds should be drawn down merely as a protection during the sunshine in the middle hours of the day, being drawn up by 2 P.M. In very changeable weather there is no necessity to shade the plants at every burst of sunshine, as they will stand a considerable amount of sunlight at this period without suffering. The plants should not be allowed to become very dry at this stage, or a check will be given that may cause a renewal of growth, instead of but one annually; therefore, in order to keep the plants in vigour, the drying-off must be very gradual. *Dendrobium Wardianum*, a species that is very liable to make a second growth immediately the new bulbs are made, must be rested all the same till the flowers fade. After having undergone seven to ten days' treatment in the warm house, the plants will have become inured to direct sunlight, and the new bulbs become fully developed, and they may then be removed to a cooler and drier house, or an ordinary greenhouse, or ainery from which the Grapes are cut; placing them where they will have plenty of sunshine, and taking care that cold draughts do not reach them. Here much judgment will be required in affording water, as from being exposed to the sun's rays and a drier air, the surface of the compost becomes dry quickly, but below it is still moist, and if the roots of the plants are kept

in a saturated compost, premature decay will set in. It is prudent, therefore, to err on the side of dryness rather than the reverse. I examine the plants two or three times a week, and as soon as signs of shrivelling are observed in a plant, a copious watering is afforded. In the autumn a plant, as a rule, will need water about once a week. The following varieties are now finishing their growth for the year:—*D. Wardianum*, *D. crassinode*, *D. nobile*, *D. aureum*, *D. heterocarpum*, *D. Linawianum*, *D. Findleyanum*, *D. transparens*, *D. Pierardi*, *D. lituiflorum*, and *D. tortile*; also the hybrids *D. Juno* ×, *D. aspasia* ×, *D. cybele* ×, *D. Dominianum* ×, *D. xanthocentrum* ×, *D. splendidissimum grandiflorum* ×, *D. euosmum leucopterum* ×, *D. endocharis* ×, *D. micans* ×, *D. aureo-Wardianum* ×, *D. Wardiano-japonicum*, *D. melanodiscus* ×, *D. chrysodiscus* ×, *D. Ainsworthi*, and its congeneric crosses. There are many plants, deciduous and evergreen species, which are still growing, viz. *D. Dalhousieanum*, *D. clavatum*, *D. Huttoni*, *D. Venus* ×, *D. mochatum*, *D. fimbriatum*, *D. Paxtoni*, *D. suavisimum*, *D. chrysotoxum*, *D. thysiflorum*, *D. primulinum*, *D. cretaceum*, *D. crepidatum*, *D. sanguineum*, *D. Boxalli*, *D. Parishii*, *D. crystallinum*, *D. anosmum*, *D. Bensoniae*, *D. superbum* (macrophyllum), and its lovely varieties, *Huttoni* and *Burkei*. Plants of these species should be afforded liberal treatment in the hottest house till growth is finished. Plants of the splendid *D. Phalaenopsis* now in full growth will require plenty of light and sun heat, and an abundance of water, and, like *D. Bensoniae*, its roots should never be thickly covered over with compost. The species *D. bigibbum*, *D. superbiens*, *D. Goldiei*, *D. stratiotes*, *D. lineale*, *D. streblolaceras*, *D. taurinum*, and *D. secundum* also luxuriate under this kind of treatment. The rare *D. atrovioleaceum*, *D. spectabile*, *D. D'Alberti*, *D. Treacherianum*, and *D. macrophyllum Veitchianum* appear to thrive best when grown in stove temperature, but in rather more shade than the varieties mentioned. *D. Falconeri giganteum* should be placed within a short distance of the roof of the Cattleya-house, in an airy position; and whilst growing, the plant should be afforded water frequently. *D. longicornu*, *D. subclausum*, and *D. Kingianum* do not require so much heat as the evergreen or deciduous species, but copious applications of water at the root whilst growing, and a light position in the *Odontoglossum*-house all the year round.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Pot Vines.—When the wood is well ripened, and the foliage hardened by exposure to the sun and free ventilation, these plants may be placed against a wall, hedge, or fence out-of-doors, the canes being secured in an erect or oblique position. Here they may remain for from two to three months. In order to remove these Vines so as not to twist them or injure the leaves, two men are required, one carrying the pot and one the cane. Water must be freely applied whenever the soil approaches dryness. The maturation of the wood of less forward Pot Vines should be secured by affording artificial heat and free ventilation; stopping laterals at the second point from the base as often as may be required; and keeping red-spider in check by the use of the syringe and clean rain water in the afternoon of fine days.

Strawberry-plants for Forcing.—So soon as a sufficient number of layers are rooted in the small pots the work of repotting them into 7 and 8-inch pots may be finished without delay.

Figs.—Trees on which a second crop of fruits is swelling, will need water at the root, and occasionally manure water, the trees being syringed thoroughly once on fine days, preferably in the morning. Let the apparatus be kept warm—65° to 70° at night; during the day a warmth of 10° to 12° higher, according to the amount of sunshine, may rule, and afford a slight amount of top-ventilation during the night, whilst the air afforded during the day must necessarily follow outside conditions. Trees that have borne a second crop must be afforded plenty of air, cutting out shoots that have reached their fullest extension, and all weak, unfruitful shoots. Water at the roots should only be applied when the border, &c., is getting very dry, and employ the syringe on fine days. If white or brown scale are observed on the shoots or leaves, remove them with a bit of sponge and soap-suds made from soft-soap. Pot plants may have their heads immersed in water, at a temperature of 145°. Bushes for early forcing growing in pots should now have the wood in a well-ripened state, and if that is the case, they may be placed outside in a warm place,

on a bed of coal-ashes, seeing that they do not lack water at the roots; failure to afford water causing the untimely fall of the leaves.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

Taking Cuttings of Pelargoniums, &c.—The time has arrived when cuttings of many of the bedding plants should be struck, the rather slow-rooting, variegated-leaved Pelargoniums being the first to claim attention. Owing to the drought experienced in some parts, Pelargoniums have made but little growth, and cuttings will be somewhat difficult to obtain. After making the cuttings, dibble them into boxes filled with a mixture of fine leaf-mould two-thirds, and sharp silver-sand one-third. If cold frames are available, the boxes may be placed therein, standing them on inverted pots or rough slates so that the cuttings may get plenty of air; and let them have the fullest sunshine. The lights should be used only in very rainy weather. The cuttings will not need any water for some time after insertion, or before they have put forth roots; when, if the soil has become very dry, the soil may be afforded water enough to moisten it; much water causes damping-off, which may occasion great losses. In this connection it is well to afford good drainage to the cutting-boxes, and the best kind of box is that made with a spar-bottom. If cold-frames are not available, the boxes may be placed in a sunny spot out-of-doors, each box being placed on a few bricks.

Antirrhinum Queen of the North.—This variety, in my opinion, is superior to any other in colour, and the variety comes quite true from seed, which few varieties do. I know of no other plants suitable for the flower-garden which is equal to it for massing. The flowers are pure white. The plants grow of about one height, another point in its favour. The plant continues in flower until late into the autumn, is raised by sowing in the spring months, and requires no protection in the winter.

Hyacinthus candicans just coming into flower should have a neat stake put to each plant, and the flower-spike secured to it.

Aloysia citriodora.—A few of this fragrant plant should be found in every person's garden, the leafy shoots forming pleasant material for mixing with cut flowers. The plants make rapid growth when planted in a favourable situation, and may be lifted in the autumn and kept green, if so desired, through the winter.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Mignonette.—Seeds may now be sown in 48-sized pots, filled with good fibrous loam five-sixths, finely-sifted horse-manure one-sixth, and sufficient sharp sand and pounded mortar to keep the soil open. The young plant is particularly liable to injury from a soddened soil, turning yellow and dying off. Let the pots be new, or old ones made quite clean by washing, and the drainage good, with a little rough soil over it. When the pots are filled with soil, which should be pressed firmly, stand them aside, and afford water with a rose watering-can, and in twenty-four hours the seed may be sown thinly, sprinkling a little fine soil over it. Place the pots in a cold frame, and shade with brown-paper till the seedlings appear. Another sowing may be made towards the end of the month, or in September.

Gardenias.—It is a suitable time in which to put in cuttings of any of the varieties, choosing soft growing shoots, and either placing them singly in thumbs, or round the sides of a 5-inch pot. The mixture used for filling the pots should be light and sandy, and care must be taken not to bruise the cutting with the dibbler, or it will decay. Place the pots in a close, moist propagating-frame, and shade from bright sunshine. When several cuttings are inserted in one pot, they should be potted-off as soon as they are well-rooted, and before the roots get entangled. When established pinch out the point. Plants growing freely may be assisted by weak manure-water afforded at frequent intervals. That made from deer's or sheep's-dung is very useful, and it is safe if used in a weak state. Alternately with this clear root-water may be used. Let the plants be afforded a strong heat, with plenty of aerial moisture, using the syringe freely amongst them. If mealy-bug appears, at once use either petroleum emulsion or Richard XL All liquid.

Bulbs for Forcing.—The time is at hand when *Lilium longiflorum* var. *Harrisi*, *Freessias*, Roman *Hyacinths*, Spanish *Iris*, &c., will be arriving from the continent, and timely preparations should be made for potting them, some loam being placed under cover in order that it may be in a suitable condition to handle when required. Pots can be washed and crocked; a site prepared for the pots to stand upon, and coal-ashes or other material placed handy wherewith to cover the pots.

Fuchsias.—If cuttings are now inserted and the young plants carefully grown-on during the winter, they will make useful plants for early work next year. Old plants which have flowered should be stood outdoors to thoroughly ripen the wood; for if plants are stored away for the winter and the wood is not firm and well ripened, the shoots shrivel and die away. Flowering examples for late work may be kept behind a south wall, and their wants carefully attended to, not letting them lack water at the root.

Miscellaneous.—If there is a flower-house, it must be made as attractive as possible with *Lilies*, *Celosias* in variety, *plumose* and other; *Balsams*, *Fuchsias*, *Abutilons*, *Browallias*, so as to vie with the out-of-doors display, everything being neatly arranged and kept free from insects, spent blooms, &c.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Figs.—The fruits on wall-trees will soon begin to ripen, and call for protection from birds, flies, and wasps, and the best kind of protection is a muslin bag, made a little larger than the fruits, which should be fastened over a fruit when the colour of ripeness is noted. Doing this occasions a good deal of trouble if fruits are numerous, and I can only recommend their use for the largest fruiting varieties, such as *Brunswick* and *Brown Turkey*, the first-named in the south often reaching 8 oz. in weight. The fruit of the Fig differs from most fruits in the ripening ceasing with its removal from the tree, and in order to obtain high flavour it must ripen perfectly on the tree, the signs of which are the exudation of juice from the eye, resembling a drop of honey, the skin getting thinner and the flesh tender. It is possible to keep a ripe fruit for a day or two after gathering in a dry warm room. Rats and mice sometimes commit havoc with the fruit. The Fig in rich soils is apt to grow exuberantly and to be crowded with shoots which, if not removed, entirely prevent the due ripening of next year's bearing shoots. It is good practice to thin out these shoots before the crop begins to ripen, retaining a sufficient number of the stronger shoots to furnish the tree, training and fastening these temporarily in their places, and at full length, not stopping them, the fruit always forming near the end of the shoot. In the warmest districts only may an exception be made to this practice, where, by leaving a few extra strong shoots in prominent positions, and stopping them at this season, some of the second crop of fruits may ripen if the autumn is very warm. Afford water to the border occasionally if the weather is hot and parching, the more if the trees are planted in dry positions, or if much mortar-rubble was incorporated with the soil. In *Sussex*, *Kent*, and the southern maritime counties generally, the Fig needs scarcely any cultivation, large crops of fruit being obtained when the trees are planted in warm situations against walls or free standing, and usually the production of fruit is so abundant that wood-growth is kept greatly in check, and is rarely superabundant, and the older the tree the more fruitful. At *Tarring*, in *Sussex*, the Fig is grown in the open in the summer, and lifted and placed in sheds and cellars for the winter, and its cultivation there is commercially a success. Such plants have compact balls of roots and soil, and get used to removal annually.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

Jerusalem Artichokes.—At this season there is not much needed to be done beyond keeping the ground free from weeds, and topping the stems when these have grown to their full height, i.e., cutting away 2 feet of the top, and trimming off the side shoots. This sort of pruning has the effect of assisting in the development of the tubers.

Celery.—As the heart leaves rise higher in the plants, let earthing-up be gradually carried on, being careful not to cover the tops of the heart leaves in the process. Let the later rows of Celery be kept free from weeds,

and the plants from suckers, and the soil frequently stirred with the short-handled draw-hoe. If the quantity of manure put into the trenches was not large, manure-water may be afforded the plants, but avoid over-feeding them, as this spoils the flavour, and renders the plants liable to rot at an early part of the winter.

Seed-sowing.—If from any cause *Onion*, spring *Cabbage*, *Spinach*, *Lettuce*, *Turnip*, and *Carrot* seeds have not been sown, no time should now be lost in getting them into the ground, the soil being in excellent condition since the late rains.

Lifting the Onion Crop.—When a half-withered appearance in the tops indicates the maturity of the bulbs, it is time to pull them; and when pulled they should be spread out thinly on mats, hurdles, or, failing these, on hard ground or gravel walks, covering them at night with canvass or mats if rain be likely to fall. The bulbs should be kept turned daily till thoroughly dried, when they should be placed thinly under cover to be sorted and stored on a rainy day.

Work in General.—Hedges may now be clipped and pruned, also Box edgings. Remove decayed vegetation from the quarters, burning *Potato* tops and *Pea* haulm, perhaps infested with fungus, and generally preserve a tidy appearance in the kitchen garden. Sweet herbs may still be cut for drying, and ripe seeds of vegetables gathered and spread out to dry.

THE APIARY.

By EXPERT.

Extracting.—Tiering boxes full of combs need not be removed from the hives till wanted for extracting purposes, honey keeping better in the hives than in the house; at the same time extracting should not be deferred longer than can be helped after honey is sealed. Great care is required in hot weather in handling newly-built combs heavy with honey, especially if they are not built down to the bottom bars of the frames. The bees should, in these cases, be brushed off the combs with a feather—not shaken off as is usual. Always return frames to the hives after extracting in the evening, and let them be placed in the same hives, and in the same position they filled before the honey was removed. A little judicious care in handling honey indoors will keep bees from trying to enter the house, and save annoyance from them. When excluder-zinc has not been used, queens are not occasionally found in the supers, and this risk must not be overlooked when clearing them of bees. Frames from which the honey has been extracted should be given back to the bees to clean up before being packed away for the winter. Always do this in the evening, as it excites the bees a good deal, and they then have time to settle down before the morning.

Condemned Bees.—Where a good supply of frames of comb is on hand, these may be worked up into fine stocks if two or more are united and fed up well before the end of September. Bees will unite readily just after driving, and it is only necessary to secure the best queen to head the stock. They should if possible be united and put into the hive the same evening on which they are driven. Very strong lots will soon build out comb foundation if given it in full sheets, but of course ready-built combs are preferable.

Removing Surplus Honey.—Without special reference here to the varied quality of the honey stored in so special and peculiar a season as this, we may say that except in heather districts the season is now virtually over, and all surplus honey may, therefore, be removed. In a very dry season like the present, no more will have been gathered over and above what was required for daily consumption since the middle of July. Unsealed sections should be removed and extracted at once, as no sealing will now be done, and the honey will be taken down into the body of the hive if left for a longer time. In some seasons bees are irascible and mischievous when they are being deprived of their stores, and unless an apiary is kept quiet and free from the wild disorder we sometimes meet with, where no care is used, a great deal of annoyance may be caused, not only to the bee-keeper himself, but to his neighbours as well.

WHEAT PROSPECTS IN AMERICA.—Reports from the Wheat-producing States are to the effect that the average condition of spring and winter Wheat combined is 89.4, or 4.5 points higher than at the corresponding date (July) last year; and 6 points higher than at the same date in 1896.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, Aug. 17	Shropshire Horticultural Society's Show, at Shrewsbury (2 days). Dover Horticultural Show (2 days). Shanklin (Isle of Wight) Horticultural Show.
THURSDAY, Aug. 18	Royal Jersey Horticultural Society's Show. Niton (Isle of Wight) Horticultural Show. Pontefract Castle Horticultural Show.
FRIDAY, Aug. 19	Devon and Exeter Horticultural Society's Show. National Co-operative Flower Show, at the Crystal Palace (2 days).

SALE.

FRIDAY, Aug. 19	Imported and Established Orchids, at Protheroe & Morris' Rooms.
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AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—62° 1°.

ACTUAL TEMPERATURES:—

LONDON.—August 10 (6 P.M.): Max., 68°; Min., 54°.

PROVINCES.—August 10 (6 P.M.): Max., 71°, East Scotland; Min., 60°, West Scotland.

FEW men have proved greater benefactors to decorative gardening than M. LATOUR-MARLIAC. The hybrid Water-Lilies, which formed the subject of his lecture on Tuesday last, are among the most lovely and most easily cultivated of plants, and it is to his skill that we owe them. The Veitch Memorial Trustees this year recognised his merits by awarding him one of their medals, which was formally awarded at the Ghent show in April. Hybrid Water-Lilies we had before M. LATOUR-MARLIAC began his operations, but they were mostly, if not entirely, hybrids between tropical or semi-tropical species, such as the hybrids *Devoniana*, *Daubenyana*, and others, raised in the Botanic Garden, Oxford whilst the great advantage of the present series is that they are mostly hardy, though some show to greater advantage if the waste steam can be conveyed into the pond or lake in which they are growing, so as to heat the water slightly. What M. LATOUR-MARLIAC may have in store in the future we cannot tell. At present the cultivated Water-Lilies are blue, as the old *Nymphaea cœrulea* or the Australian *N. gigantea*, and some others. These blue-flowered species form a group by themselves and generally refuse to cross with others. Then there are white Water-Lilies, whose loveliness is appreciated by everyone; these may assume by hybridisation or natural variation rose-coloured tints, as in the rosy form of the common white Water-Lily.

Then there is a yellow-flowered section, including *amazonum* and some others.

The Lotus group, characterised by their bold habit, thick petals, and blunt anthers, not provided with any terminal process, has in the type white flowers, but among its nearest relatives or descendants are flowers of all shades of rose up to deepest crimson.

M. MARLIAC has at present thirty-four dis-

inct varieties, and doubtless many more are to come. M. FROEBEL, of Zurich, has one very richly-coloured variety. The climate of Great Britain is considered very suitable for them, the cloudy sky not inducing the scorching of the bloom which takes place in a dryer, clearer atmosphere. Heavy loam without manure, the temperature of the water as nearly equal to that of the air, still water—these are the main points to be attended to. For those who have not a quiet pool at their disposal, a tub half filled with mould, covered with 6 to 8 inches of water, is all that is required. We believe the late Reverend Mr. ELLACOMBE, the father of Canon ELLACOMBE, grew many in this way, but that was before the days of LATOUR-MARLIAC. Once we grew them in a deep drain-pipe closed at the bottom and sunk in a Rhododendron bed. The plan answered well till one day the frost split the pipe, and all was over. This, again, was before the days of MARLIAC.

We do not know precisely of what species M. LATOUR-MARLIAC has availed himself; it is, however, obvious that there is an abundance of colour to select from, whilst by breeding from the North American and Canadian *odorata* and *tuberosa*, great power of resistance may be obtained. In his paper read on Tuesday, M. MARLIAC mentioned that he impregnated the richly-coloured tropical forms with the pollen of the hardy varieties such as *tuberosa* and *odorata* above-mentioned.

Water-Lilies, like most other plants, are very sensitive to slight changes in the "environment," and hence they vary so considerably that it is not always easy to discriminate between the species. M. LATOUR-MARLIAC has increased this difficulty, for which some botanists will not thank him, whilst others, taking a broader view, will recast their opinions as to what is a species, and probably greatly extend it. At any rate, the only narrow limitations are broken down on all sides.

Amongst other means of discrimination, some degree of help may be obtained from the examination of the arrangement of the air canals, with which the leaf-stalk and the flower-stalk are traversed from one end to the other. Many years ago it was found practicable in the Oxford Botanic Garden, in the absence of flowers, to ascertain, by their aid the group to which a particular specimen belonged, and to make a good guess as to the species. Of course, variation must be expected, but this affects principally the smaller tubes.

Fac-similes of the arrangement of the air-canals in the petioles and peduncles of these plants were obtained by cutting horizontally across the leaf or flower-stalk, and applying the cut surface to a pad of blotting-paper, saturated with ink, and then taking an impression from the blackened section upon white paper, as suggested by the late WILLIAM BAXTER, of the Oxford Botanic Garden. Thin transverse sections of the petioles and peduncles may also be pressed and dried for future reference.

From the results thus obtained, it will be seen that the variations in the arrangement of the air-canals in the species of *Nymphaea* may be reduced to four principal modifications, of which two have reference to the disposition of the air-canals in the leaf-stalk, and two to that which obtains in the flower-stalk.

Of the two modifications which exist in the petiole, the first is that in which there are four central canals, disposed in pairs opposite to each other, and surrounded by a varying number of smaller tubes. The most perfect illustration of this modification is to be found in the petioles of *Nymphaea odorata* and *N. minor*. In *Nymphaea alba* and *N. nitida* the same arrangement prevails, but the four central canals

are here surrounded by a number of smaller tubes, as is also the case in the leaf-stalks of *Nymphaea cœrulea*, *cyanea*, *micrantha*, *pygmæa*, *mexicana*, in which species, moreover, two of the central canals are usually of greater diameter than the other two. The petioles of *Nymphaea elegans* and *N. ampla* possess the same arrangement of their air-tubes. The species in which this modification exists belong to the sections *Cyanea* and *Castalia*.

The second modification in the arrangement of the petiolar air-tubes is that in which there are two central canals of a semi-elliptical form, and of much larger diameter than those by which they are surrounded, as in the petioles of *Nymphaea amazonum*, *Lotus*, *rubra*, *dentata*, and *Devoniana*, the latter being a hybrid between *Nymphaea rubra*, and *N. dentata*.

The arrangement of the peduncular air-tubes likewise presents two principal modifications, of which the first is that in which there are four central canals, arranged in pairs, exactly in the same manner as has been described in speaking of the first modification of the arrangement of the canals in the petioles. The species in which this modification occurs are *Nymphaea odorata*, *minor*, *pygmæa*, *nitida*, and *alba*, which have therefore a similar disposition of the air-tubes in their leaf and flower-stalks. The species enumerated are all included in the section *Castalia*.

The other mode of arrangement of the air-tubes in the flower-stalk is that in which there are five, six, or more, central canals, of large diameter, disposed round the centre of the stalk, and surrounded by one, two, or more rows of smaller canals, each row containing twice as many canals as the row immediately internal to it, as in the flower-stalks of the following:—*Nymphaea cyanea*, *mexicana*, *cœrulea*, *micrantha*, *Lotus*, *dentata*, *dentata major*, *rubra*, and *Devoniana*, a list comprising species belonging to all three of the sections into which De Candolle has divided the genus. *Nymphaea elegans*, *amplea*, *amazonum* and *gigantica*, probably also belong to this group.

By taking the characters of the petioles and peduncles together, the before-named species of *Nymphaea* may be divided into three groups—First, where the arrangement of the air-canals is similar both in leaf-stalk and flower-stalk, consisting of four central canals, arranged in pairs, and surrounded or not by other smaller tubes. Under this head are included *Nymphaea odorata*, *minor*, *alba*, *nitida*, and *pygmæa*, all of which belong to the section *Castalia*.

The second group is that in which the air-tubes of the leaf-stalk are disposed in the same manner as in the first group, but in the peduncle there are five, six, or more canals, placed around the centre of the flower-stalk, and encircled by one, two, or more rows of tubes of smaller diameter, but each row containing twice as many air-tubes as that immediately interior to it; thus, supposing that there are six large tubes in the centre, the row exterior to it will contain twelve of smaller diameter; this again will be surrounded by a row of twenty-four canals, of still smaller size, and so on. Of the species heretofore enumerated the following belong to this group: *Nymphaea cœrulea*, *cyanea*, *mexicana*, *micrantha*, the two former belonging to the section *Cyanea*, the latter to the section *Castalia* of De Candolle.

The third group includes those species in which the petiole has two large semi-ovate canals, and in which the arrangement of the canals in the peduncle is the same as has just been described in the second group. The species in which this disposition occurs all belong to the section *Lotus* of De Candolle; they are: *Nymphaea rubra*, *Lotus*, *dentata*, *dentata major*, and *Devoniana*.

With reference to the radiating tuberculated hairs which exist in the air canals of some of these plants, and which are readily visible by the naked eye, M. Trécul was of opinion that the form of these hairs varies with the species but, this is not borne out by observation; the canals of largest diameter, such as those which occur in the petioles of *Nymphaea dentata*, and others of the section *Lotus*, have few, if any, of these singular and beautiful structures. In no species



VANDA ×, MISS JOAQUIM. FROM THE COLLECTION OF SIR TREVOR LAWRENCE, BART.

heartly co-operation of their guest, Mr. HENDERSON. From close contact with him in deliberations of their society it had been an uninterrupted pleasure to work with him. He concluded by wishing him long life, and just hoped they would have another quarter of a century's services from him. Mr. HENDERSON having replied in suitable terms and thanked the donors for their handsome gift, the meeting soon broke up. Among those present was perhaps the oldest competitor of the society, Mr. JOHN POTTIE, Balgonie Place, who has been forty-eight years a member of the society, has competed every year, and never failed to be in the annual prize-list.

PRESENTATION.—Mr. FREDK. GEESON, on his retirement from the position of gardener to the late Earl of EGDMONT, of Cowdray Park, Midhurst, consequent on the changes in the establishment, has been presented with a silver-mounted walking-stick, with a suitable inscription, cigarette-case and holder, together with an address from the men employed in the gardens, expressing their regret on his retirement, and wishing to recognise his straightforward dealing and general kindness in his long connection with them, and express a wish that he may soon obtain a good appointment where his skill as a gardener will be suitably appreciated.

CATERHAM GARDENERS' OUTING.—On Wednesday afternoon, Aug. 3, four brake loads of the Caterham gardeners and their friends, numbering 47, were—thanks to the generosity of Mr. JEREMIAH LYON—taken to Box Hill, Dorking, and to Burford Lodge, where Sir TREVOR LAWRENCE took them over his beautiful garden and Orchid-houses, and afterwards entertained them to tea on the lawn.

PLANT PORTRAITS.

ACALYPHA SANDERIANA, *Garden*, July 23; *Revue de l'Horticulture Belge*, August 1.

DOUBLE TULIPS.—1, Murillo; 2, Salvador Rosa; 3, Rose Blanche. *Florilegium Haarlemense*, t. 20.

HYACINTH GRANDEUR A MERVEILLE.—Single, rosy-white. *Florilegium Haarlemense*, t. 19.

IOCHROMA FLAVUM, *André*.—Shrub, with stalked, lanceolate, glabrous leaves, and clusters of stalked, pendulous, tubular-cylindric yellowish-green flowers, each about 3 cent. long. *Revue Horticole*, August 1.

LILIUM SPECIOSUM RUBRUM, *Florilegium Haarlemense*, t. 21.

PHLOX DIVARICATA, *Linn.*—Flowers grey-lilac. *Revue de l'Horticulture Belge*, August.

PHYSOSTEGIA VIRGINIANA ALBA.—A white variety of an old but valued herbaceous perennial. *Revue Horticole*, July 16.

VEGETABLES.

PEA "MANSFIELD SHOW."

WE have received a Pea plant and gathered pods of the above variety from Messrs. Wright Bros., Mansfield, Notts. The plant possessed seventeen pods, with an average of eight seeds in a pod, or a 136-fold yield. Peas dark green and flattened, pods straight, flavour sugary, and cooking of a good colour. The variety is, we are told by the raiser, the result in the first instance of a cross between Carters' Stratagem and Sharpe's Triumph, made nine years ago, and of rigid selection afterwards. They further inform us that 3½ feet is the average height of the rows. It is exceedingly vigorous and hardy. The variety was given an Award of Merit at the trials at the Royal Horticultural Society's Gardens, Chiswick. As many as twelve good Peas have been found in a pod.

PLANT NOTES.

DIANTHUS ATKINSONI.

AMONG species of Dianthus, "Pinks," I know of none to equal D. Atkinsoni for freedom of flowering and brilliancy of colour. Although a garden hybrid, with, presumably, D. chinensis as one of its parents, it is not so often seen in gardens as it should be. When planted on a rockery in a sunny situation, and in a soil consisting of sandy loam, its large, deep crimson flowers make a striking display at this

season. These are borne in great profusion on stems 10 to 12 inches in height, while the leaves are linear-lanceolate in shape, and dark green in colour. As it does not ripen seed, the only method of propagation is by means of cuttings, which root readily if taken off about 4 inches long, and placed in pots in a compost of sharp sand and loam, provided they are carefully watered and shaded from excessive sunshine. It is thoroughly hardy, and although reputed by some authorities to be of biennial duration, with me it is a true perennial, increasing rapidly year by year. *E. S., Woking.*

A PÆONY DISEASE.

"PREVENTION is better than cure," holds good in the instance of plant diseases, as in other matters, and as I am already under a ban for being too personal in indicating what I consider as shortcomings on the part of practical gardeners, can, without suffering

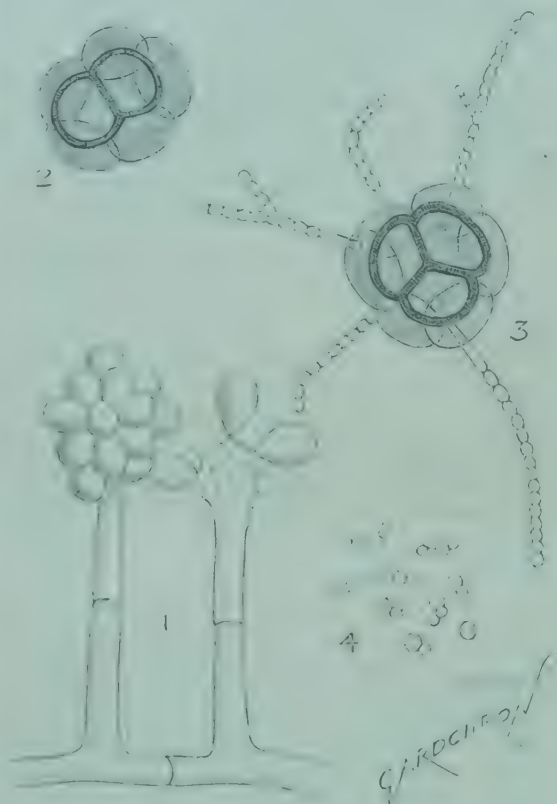


FIG. 32.—A PÆONY DISEASE.

1. The Botrytis or summer condition of the fungus, which forms a white meal on the surface of diseased stems just above ground-level; $\times 400$.
2. Sclerotia, formed in decayed stems; $\times 400$.
3. A Sclerotium germinating and producing chains of spores; $\times 400$.
4. The minute spores formed by Sclerotia reproducing themselves by budding; $\times 400$.

further condemnation, pursue the same course. My present grievance is that gardeners—as a rule—do not anticipate danger, so far as fungous diseases are concerned. "How much should a gardener know," is a matter that is now being discussed in various periodicals, and even Mr. Percy T. Ingram, who enumerates some forty different requirements as essential to constitute an up-to-date gardener, seems oblivious of the fact that the subject of plant diseases should be one of the factors necessary for attaining to that desirable position.

Pæonies are not classed among the category of plants difficult to cultivate, and even when severely left to themselves in old-fashioned cottage gardens, usually make a good show; whereas, when specially nursed, the gardener observes that his grassy manure-fed plants, just before the period of blooming, too frequently become limp, and within a week have completely collapsed, leaving unsightly gaps, which it is impossible to fill before next season. A fungus is the cause of this misfortune, and it effects its

object as follows. If the lower portion of a diseased stem is placed in a bottle containing a small quantity of water, and allowed to remain for two or three days, its surface will present a white, mealy appearance, caused by the fungus, which has produced its fruit on the surface of the stem. Of course, the same happens if the stem remains standing, only the white spots are blown away by wind or washed off by rain as soon as mature, consequently the fungus is not so conspicuous as when protected from wind and rain in the bottle. If a minute portion of this apparent white meal is examined under a microscope, it will be found to consist of numerous upright branches, each bearing a dense cluster of spores or reproductive bodies at its tip (fig. 32, 1). These spores, when ripe, are carried away by wind or rain, and those that alight on Pæony stems germinate on the surface, the germ-tube penetrates the stem, and forms a mycelium in its interior, from which a crop of spores is eventually formed on the surface; the time required for this development varying from six to ten days, depending on the amount of moisture and temperature present. This condition of things continues throughout the summer—that is, if diseased plants are not promptly removed and burned. When diseased stems are nearly dead, the fungus ceases to produce the kind of fruit described above, but the mycelium present in the cortex, or outermost portion of the stem, becomes resolved into myriads of very minute brown nodules or sclerotia (fig. 32, 2). As the diseased stems decay, these sclerotia are deposited on the soil, where they remain in an unchanged condition until the following spring, when they give origin to several slender branches, each of which bears at its tip three or four chains of very minute conidia (fig. 32, 3). At maturity the conidia forming these chains separate from each other, and further, each conidium is capable of germinating and forming a mycelium, and if this germination occurs in contact with the young and tender stem of a Pæony just above the ground-line, infection takes place, and the summer form of the fungus quickly follows.

As already stated, the summer spores are transported by wind, and alight in all sorts of situations. Carefully-conducted experiments have shown that these spores possess the power of germinating, and forming a mycelium on dead and decaying vegetable matter, as well as on living Pæony stems. When growing on a living host, several crops of white summer-spores are formed; whereas, when growing on dead material, there is a tendency to form sclerotia from the first. Now, manure-heaps, on account of the extra temperature and moisture, greatly favour the germination and growth of any spores that alight thereon, and the formation of myriads of sclerotia follows. When these sclerotia form their chains of spores, the latter continue to add to their number by a process of budding or sprouting similar to that which occurs in the reproduction of the yeast fungus (fig. 32, 4). Gardeners insist in saying that the application of green manures causes the disease of Pæonies and certain other plants, and the contention is perfectly true; a young Pæony stem growing through a layer of manure, probably teeming with sclerotia and budding spores, cannot be expected to escape in every instance, and if only one is inoculated, the disease spreads rapidly.

Regarding the value of green manure, or manure that is still fermenting, as a fertilizer, we have nothing to say at present; but from our standpoint, we have no hesitation in stating that every such manure-heap is a hot-bed of fungous disease, and is such for several distinct reasons: 1. Diseased refuse of every kind, as a rule, finds its way there; the common idea being, that if a crop fails, possibly owing to the attack of some fungus, it will at least make manure, and thus is not wholly lost. Let him who acts on this idea remember sclerotia and budding spores. 2. The higher temperature of a "sweating" manure-heap causes a continuous influx of cold, spore-laden air on every side. 3. The temperature, moisture and abundant nutriment present favour the rapid germination and development of fungus spores.

PREVENTIVE MEASURES.

Remove and burn all drooping stems the moment the first symptoms are observed.

Where the disease has previously existed—or better, under any circumstances—remove the surface-soil early in spring, and replace with fresh soil mixed with quick-lime.

Do not use green manure as a top-dressing.

The mycelium of the fungus is not perennial in the root of the Pæony, so that it starts life perfectly free from its enemy each year, and can only become diseased through inoculation from sclerotia lying in the soil, from germs contained in manure, or from floating summer-spores borne from some diseased plant growing in the neighbourhood. *Geo. Massee.*

CARNATION QUEEN OF THE YELLOWS.

The flower of which fig. 33 is a representation was kindly sent for our inspection about July 20 last, with a note from the senders, Messrs. B. S. Williams

decorative beauty of this one, and at this season of the year there are few flowering shrubs which are capable of creating such fine effects when treated as a solitary specimen. A native of North America, it is quite hardy, and succeeds in almost any kind of soil. *E. S., Woking.* [S. Lindleyana is even larger. *Ed.*]

HOME CORRESPONDENCE.

A LARGE LILIAM AURATUM.—I recently visited an amateur gentleman, Mr. John Kinloch, Kilmalcolm, near Paisley, who has a *Lilium auratum* of which he is naturally proud. Several years ago he bought the bulb for a shilling, and has succeeded in producing a plant of gigantic proportions. The bulb now fills a 14-inch pot, has quite a forest of stems, and 261 blooms. It is not of the monstrosium type, with flat stems and small flowers, but the true *auratum*, with round stems and large flowers. The plant is in perfect health and well foliated to the bottom, each bloom is perfect, the whole forming a magnificent mass of flowers. *Robert Macfee.*

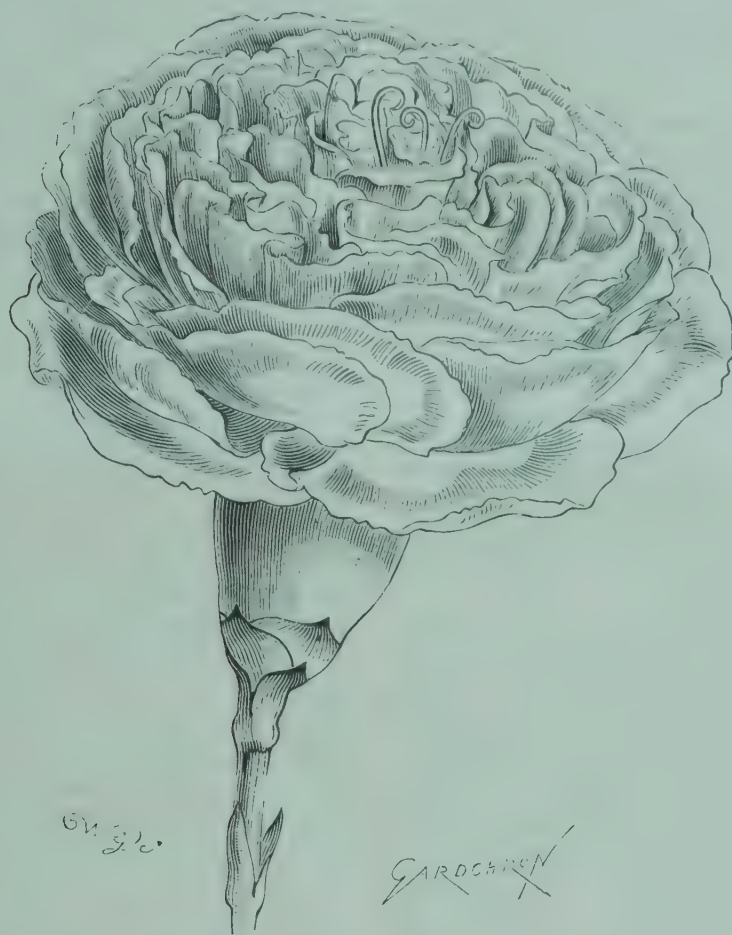


FIG. 33.—CARNATION QUEEN OF THE YELLOWS.

& Son, of the Paradise and Victoria Nurseries, Holloway, to the effect that the variety was the best yellow variety with which they were acquainted—an opinion with which we were also entirely in agreement. As gardeners are aware, a faultless yellow Carnation is a decided acquisition to florists and floral decorators, and if it have fragrance, its value is enhanced.

TREES AND SHRUBS.

SPIRÆA ARIÆFOLIA.

I NOTICED recently in this neighbourhood a remarkably fine specimen of this species, that was quite 7 feet in height, several yards in diameter, and completely covered with its panicles of nodding creamy-white flowers. Although the species of shrubby *Spiræas* are numerous, I was greatly struck by the

LA VERSAILLAISE RED CURRANT.—Though arousing little notice, there was exhibited at the last Drill Hall Meeting of the Royal Horticultural Society a dish of this fine Currant from Jersey, under the name of Comet. I regret having been unable to wait till the dish came before the Committee, that I might back Mr. A. H. Pearson in his contention that the variety was La Versaillaise and no other. The sample sent was not one whit finer or better than are examples of the French Currant, our Red Cherry, one sees in so many directions. The Fruit Committee some time since unhappily were induced to grant this Jersey Currant an Award of Merit, under the name of Comet. I objected at the time to that course, and now feel that there is no other course open but to revoke that award, and thus save the public from purchasing an old variety under a new name. *A. D.*

BLINDNESS AMONG STRAWBERRIES.—I have been much interested in your correspondent's remarks on this very old subject, and think Mr. H. Fisher, of Flixton, and Mr. W. Horne, of Cliffe, have

both indicated one cause, at least, of this misfortune, viz., excess of vigour. Mere growth and fertility are at opposites among the Strawberry-plants, as well as among the Apples, Pears, and Plums. Push vigour beyond measure and you must pay for your temerity, and undue disturbance of natural laws by sterility more or less pronounced. The Editorial suggestion of increasing the supply of pollen—which used to be successful enough in the forties in making blind or barren Hautbois fruitful—might or might not have more or less effect on our over luxuriant Strawberry-plants of to-day. A row or two of the old Black Prince or Garibaldi would be worth trying alongside of Monarch or other semi-sterile varieties. To give, however, the Editor's suggestions a fair chance of success, his conditions must be carried out in regard to time most exactly. "Plant some fertile variety coming into flower at the same season in alternate rows to Monarch." The subject is of more importance than it seems. Blindness is by no means confined to Monarch. Anyone familiar with the raising of new Strawberries or growing old ones over large areas, are mostly all too familiar with the weakness or malady of blindness. So great in various forms is it among seedlings, that it might prove a useful rule to insist that no new Strawberry should have a Certificate of Merit from the Royal Horticultural or other responsible Society until it has been seen three or more times. Alike in form, size, colour, flavour, fertility, such a rule would enable novelties to settle down into fertile ways before being medalled or certificated. Even such a generally well-informed writer as "A. D." needs to be reminded that, though he may never yet have heard of a case where Strawberry flowers went blind because pollen was absent [Common enough. *Ed.*] he must surely have heard of or seen many in which they went blind through bad or injured pollen, or stigmas untimely mated, or pollen imperfectly matured. The term blindness may, therefore, be said to range over the entire field of Strawberry cultivation, from total blindness, that is, the entire absence of flowers, through blindness of various degrees, from frost, an excess of heat, moisture, drought, over-feeding, over-rich soil, or through excessive manure, sudden transitions from heat to cold, drought to moisture, shade to sunshine, liberal rations to stinted measure, are the main causes of abortion among Strawberries. Some sorts of blindness are called blacks, and others barrenness. The first is the work of the frost, and is often confined to the embryo fruits, the stamens being harder often escaping to no good purpose. Barrenness may consist of different percentages of flowerlessness, as seen in the ratios given by Messrs. Bunyard and Fisher. Notwithstanding all that has been said, and apparently proved by botanists, on the dioecious character of some Strawberries, not a few growers still stoutly deny this; and the most stubborn difficulty of all is that blind or sterile beds of Hautbois and others left for destruction, or treatment with more and better pollen, have taken again to fruiting freely without the remedial measures. Possibly in their year of blindness and sterility these Strawberries sowed their wild Oats—that is, their excess of vigour in their years of barrenness—which enabled them to bear good crops for some years afterwards. The moral seems to be, do not over-feed young Strawberries, especially choice ones. But then old Keens' Seedling was seldom without a few old blind rogues, which were always stronger and more fertile in runners than the normal stock. *D. T. F.*

CARBOLIC SOAP AND GREEN-FLY.—Your correspondent, "W. W.," is perfectly justified in calling the attention of your readers to the effectiveness of carbolic soap in the destruction of the common Rose aphid, but he cannot claim to have first made the discovery, for I have used it with success for many years, and during the past six years have had ample opportunities of expatiating upon its merits as an insecticide of great value to gardeners. Carbolic soap, if properly applied, will not only prove to be one of the most efficacious insecticides for the destruction of the Rose-aphid, but for almost every other pest of its species; it would be practically useless to many if dipping the affected parts was the only method of its successful application. Undoubtedly the best means of preparation is to dissolve 1 lb. of carbolic soap in 2 gallons of boiling water, place this in ordinary pint bottles, which should be tightly corked and stored away till required; add one pint of this at any time to four pints of soft water, it will readily become amalgamated, and may be applied morning and evening to the affected trees—it will be seen the pests have become readily destroyed, and the plant's condition considerably improved. *J. H. Walker, F.Z.S.*

THE APOTHECARIES GARDEN AT CHELSEA.—The Apothecaries Garden at Chelsea is in danger of disappearance, for it is announced that the Society of Apothecaries have intimated they are unable any longer to maintain the famous old physic garden, which has been in their possession for over two centuries and a quarter. It is recorded it was in 1673 the original lease was granted to the Society by Charles Cheyne, whose name has been "writ large" in the topographical history of the parish; but from 1721 it has been associated with Sir Hans Sloane, whose statue was erected in the centre of the garden, and whose name may be said to be a household word to all sorts and conditions of Londoners. The conditions under which the garden was made over to the Apothecaries Society were: "That it should at all times be continued as a physic garden for the manifestation of the power and wisdom and goodness of God in creation, and that the apprentices might learn to distinguish good and useful herbs from hurtful ones." Another condition imposed was that each year the Society should present to the Royal Society specimens of sixty new plants until their number reached 2,000. Some records state that the garden was originated by Sir Hans Sloane, and that in 1721 it was by deed of gift by him handed over to the Apothecaries Society, who have owned and maintained it to this day, Sir Hans granting the Society the freehold. From a sense of gratitude the Society erected in the centre of the garden a marble statue of their benefactor, and they also formed a library of botanical works, and added from time to time numerous specimens of dried plants. The statue was executed by Michael Rysbrack. "At the time the garden was formed," writes the author of *London Visited in 1851*, "it must have stood entirely in the country, and had every chance of the plants in it maintaining a healthy state. Now, however, it is completely in the town, and but for its being on the side of the river, and lying open on that quarter, it would be altogether surrounded with common streets and houses." Since these lines were written, the commodious Chelsea Embankment has cut it off completely from the river, and though houses have been built about it, they are in many cases palatial rather than common, though they shut the site in more completely than before. Of late years the appearance of the walls, grass, trees and shrubs, and houses, have become that of most London gardens—dingy, smoked, with certain signs of impoverishment. But it is interesting for its age, for the few old specimens it contains, including the Cedar of Lebanon, which is supposed to be 200 years old. This garden will, in the memories of contemporary horticulturists, be associated with the name of the late Thomas Moore. During the term of his curatorship the list of medicinal plants was extended, the houses were gradually renovated and added to, and the collections of ornamental and useful plants cultivated on the best principles. In spite of the disadvantages of situation, there are still grown many of the plants yielding the drugs found in the *London Pharmacopœia*. An effort is being put forth by certain public-spirited individuals to save the garden to the locality. The Charity Commissioners are being approached to ascertain if they would be willing to sanction its acquisition by the governing body of the City Parochial Charities, and its subsequent maintenance by them as a botanical garden. *R. D.* [Some illustrations of the old garden were given in our number for July 19, 1890. *Ed.*]

A GOOD EARLY PEA.—A few years ago Mr. "Punch" had an amusing article upon his endeavour to select seeds for his garden; his table was covered with catalogues, and no matter what vegetable or flower seed he wanted, each catalogue had some special one of its own to offer, and each of course superior to all others; the joke, of course, had a substratum of truth. Take, for instance, the case of Peas. I wonder what space of ground would be required to grow one row of the different varieties offered from the various catalogues which are obligingly sent to us at the opening of the year. Considering all this perplexity and confusion, I think one is doing a service in drawing attention to one of unquestioned merit. One great effort of seed raisers has been to get a good early Pea; most of those already obtained are white Peas, and deficient both in size and flavour. Last year I received, however, one from Messrs. Sutton, of Reading, under the name of Sutton's "Early Giant" Marrowfat; this seems to be all that is required in an early Pea. It is large, and the pod contains ten or eleven peas. They are green, and of excellent flavour, while it is a most abundant cropper, and the plant runs about

3 feet high. I took a few pods of it to the Drill Hall when Mr. Sherwood gave his lecture on edible Peas, and many a gardener to whom I then showed it agreed with me that it was a most valuable acquisition; and I have no hesitation in recommending it. *Wild Rose.*

GARDENERS' CHARITIES.—I have not entirely followed Mr. Fletcher's correspondence concerning these, but I take it that he more particularly refers, as regards the Gardeners' Royal Benevolent Institution, to those non-subscribers who are so often [Sometimes. *Ed.*] elected pensioners over those who have been subscribers. I myself have always made it a point to give my votes only to those who have been subscribers; and I certainly think that while there are subscribers wanting to be put on the pension fund, non-subscribers should not be entertained at all—but, supposing there should be vacancies for more than the number of subscribers offering themselves, then let any deserving outsiders compete with the others. I think if the rules are strictly conformed to, no ground of complaint could exist. *A. Robinson.* [Most of us will admit that those unfortunate gardeners and their widows who have fallen on evil days in their old age are deserving of our charity. There are many reasons why a gardener has not become a contributor to the funds of the Gardeners' Royal Benevolent Institution; and after all that has been said and written, it is a most fortunate circumstance for him and his that such an institution exists, and that it is carried on upon other than strictly benefit society lines, and it is to be hoped that it never will be. *Ed.*]

RHODODENDRON SMITHII AUREUM.—I was pleased to see the note on this hybrid by Mr. W. J. Bean in your recent issue. It deserves every word of commendation there given, and if it were more often met with its beauty and distinctness would, I am sure, impress and please many who, as yet, do not know the variety. A number of small plants were recently in flower at the nursery of the Messrs. R. Veitch & Sons, Exeter, who have had this form for many years. It is constantly being increased, so that the plants have not attained any great size. Grown in pots, and flowering in the month of May, it comes as a most welcome addition to the early blooming subjects for the conservatory. I am not quite certain if the strong-growing *R. altaclarensis* has been used as a parent in these particular hybrids, if not it would seem to me in this form (a hybrid itself) we have one which, if used with some free-flowering type, would produce a progeny as fine or even better than *r. aureum* itself. *W. Swan.*

ANDROSACE SARMENTOSA WILD IN NORWAY [?].—Mr. Townsend Logan, living at Upton Lawn, near Chester, has a shooting in one of the Lofoden Islands, off the north-west coast of Norway, within the arctic circle. Two years ago Mrs. Logan asked her son to bring home a few rock-plants for a rockery she was making. Amongst them was one which is now flourishing luxuriantly at Upton Lawn, and is beyond doubt *Androsace sarmentosa* (Wallich). I admit the great improbability of a plant hitherto only known to be wild in the eastern Himalayan range being found in an island in the arctic regions of Europe, and it was suggested to me, when two months ago I first received the specimen, and mentioned it to a botanist, that it was perhaps a large form of the European *A. villosa*. I also know that a plant intermediate between *A. sarmentosa* and *A. villosa* was raised by me and others a few years ago from seed distributed by Dr. King, of Calcutta, and collected for him in the Chumby Valley, in Sikkim. This was referred at first by Sir Joseph Hooker to *A. villosa*, but is now generally called *A. sarmentosa* var. *Chumbyi*. The Norway plant in question is, however, in every respect—size, flower, stature, and habit, typical *A. sarmentosa*. The finder submitted to-day to a searching cross-examination made by me, and has no doubt that it is the plant found by him in the Lofoden Islands, and I have no doubt of his good faith. However, I have by this note called the attention of those interested in the distribution of botanical species to his supposed discovery; and Mr. Logan has promised that he will this year, when he revisits his shooting-ground, collect and send home more specimens of the same plant. He informs me that there is not a house within 5 miles of the spot where he collected the plants, a spot about 1 mile from the sea, and perhaps 500 feet above its level. *C. Wolley Dod, Edge Hall, Malpas, July 30.*

A NEW BRITISH ORCHIS: CORRECTION.—In a recent number of the *Gardeners' Chronicle* I made a

somewhat premature announcement that an Orchis, of which several examples had been found by a friend near Arisaig in the West Highlands, had been identified by comparison in the Kew Herbarium with *Habenaria odoratissima*. I had read somewhat carelessly a letter from my son, in which he said that he had sent a specimen to Kew for identification, and that he thought it was *H. odoratissima*. Of course, in a dried-up flower, which had made two or three expeditions by post, the characters were not very clear; but I now hear from him that the best authority on British Orchids at Kew considers the plant to be a hybrid *Habenaria conopsea* × *H. albida*. An apology is due from me to the botanical department, which I hereby ask you to publish. *C. Wolley Dod, Edge Hall, Malpas.* [But what is *Habenaria conopsea*?]

WHAT IS A VIOLA?—At the Glasgow and West of Scotland Pansy Society's exhibition last month, that veteran grower and raiser, Mr. John Baxter, Daldowie, Broomhouse, had a stand of "Violas" disqualified because he had in it a spray of a seedling somewhat resembling Archie Grant. The judges were Mr. J. D. Stuart, the well-known raiser from Belfast, and Mr. Hay, of Linlithgow. Mr. Baxter's stand was disqualified because the seedling referred to was not a Viola in the opinion of the judges. Was this quite fair to Mr. Baxter? I do not think so. Such varieties have invariably been shown as Violas at our Scotch shows for many years, and if they are to be excluded, it ought not to be by the judges on the show day, but by a condition in the prize schedule. What have the National Viola Society or the Viola Conference people to say on the point? *Edina.* [A Viola is a species of Viola; when a divergence is made another name (not Latin) should be applied. *Ed.*]

"BLINDNESS" IN THE STRAWBERRY.—I was much interested in the correspondence in the *Gardeners' Chronicle*, on p. 108, of "Strawberries going blind," as I planted one dozen runners this spring of Monarch, and allowed them to flower, which eight did out of the dozen, the four I pulled up and threw away. This, however, is not peculiar to that variety, for I have had Auguste Nicaise from two-year-old plants that looked strong and healthy, of which three-fourths were blind or flowerless. I should like to hear the opinion of some of your correspondents if the very mild winter had anything to do with it. *J. Barnard.*

PEAS.—I was much interested in Mr. R. Dean's article on Peas at Messrs. Hurst & Sons, but I do not find among the varieties there mentioned that valuable Pea, Sutton's Dwarf Defiance. With me this variety has done splendidly, and outstrips any dwarf variety I have grown here. The pods are as large as Improved Dr. McLean, containing frequently as many as ten Peas, and the flavour equal to that of any Pea I know. I consider it a very valuable Pea to those whose space is limited, and who find it difficult to obtain sticks for tall sorts, as it requires nothing higher than 18 inches or 2 feet. It may be grown either as a second early or main crop. *George E. Parr, Hampton Court Gardens, near Westminster.*

EULOPHIELLA.—In the *Gardeners' Chronicle*, April 2, 1898, is figured a highly remarkable Orchid, *Eulophiella Peetersiana*. Can it be we have to do here with a plant belonging to the large genus of epiphytal or terrestrial Orchids—*Eulophia*? They are natives of tropical Asia, Africa, and America, but occur in greatest numbers at the Cape. They have either pseudo-bulbs, with one or two leaves, or tuberous rhizomes of the size of Potatoes or larger, with the leaves and flower-scapes arising laterally from near the base. The leaves are grassy, or lance-shaped and plaited, and the flower-scapes either single or branched, bearing few or many flowers, which seldom exceed 1 inch in diameter. The prevailing colour is yellow. The sepals and petals are nearly equal, the lip pouched or spurred, with an entire or trilobed limb, bearded or crested in the middle, the column with a terminal helmet-shaped anther-case enclosing the two pollen-masses, with their very short caudicle attached to a rather large diverging gland. *J. W. Heyl; Tjilodur, Botanical Mountain Gardens, Java, July 5, 1898.*

SANDER'S PERFECT ORCHID PAN.—As a reader from my boyhood (over thirty years), and also as an occasional contributor to your pages, I would bring to your notice that this pan Messrs. Sander & Co. claim as something new, has been in use in the East to my knowledge for more than ten years. I was one of the first to have them made, and used them in

growing Orchids and Ferns with great success. They are found in common use in most of the botanic gardens, and with all those who have a good fernery. J. A.

THE CULTIVATION OF EUROPEAN PLANTS IN MEXICO.

AN interesting little article has appeared in the *Revue Générale de Botanique* for July on this subject, by M. L.-G. Seurat. He observes that the mean annual temperature of the town of Mexico is not very high, being only 15° 4' C. (about 60° F.) in the shade. This allows of a certain number of European plants being cultivated upon the table-land, such as corn, garden vegetables; fruit-trees, as Pears, Apples, &c. A large number of common European plants are also to be found in the gardens of Mexico; but, on the other hand, since there is no rainfall for eight months in the year, many European plants cannot be grown. Agaves and Cactaceous plants are the only kinds which can withstand the extreme drought. In places where one can supply water artificially, there are excellent cultivations; for example, in a "hacienda" near Mexico, magnificent crops of corn and Maize are secured—two per annum—by irrigating the fields during the dry season. In other haciendas the Maize is sown towards the end of the dry season in June, and the rainy season following; the young plants have thus an abundance of moisture, and grow rapidly.

On the south-side of the town the cultivation of garden herbs is carried on, but under peculiar conditions. This region was formerly the site of a vast but shallow lake. The Aztecs have recovered some land by the cultivation of Sedges, preserving some inlets where water accumulates. These inlets circumscribe small rectangular islands, which actually float on the water. It is upon these miniature fields where the sowings are made. These floating gardens are called "chinampas." The canal of the Viga, which runs from south to north, from the lake of Xochimilco to Mexico, is hemmed in by these floating gardens.

The Indians row around the chinampas in very narrow canoes, and by means of bowls throw water upon the little beds. The Chinampas are moveable, and it often happens that they are driven against each other by the wind.

The plants cultivated on the floating chinampas are very various—e.g., corn, Barley, Maize, Cabbages, Carrots, Turnips, Artichokes, Leeks, Radishes, &c. Besides these, there are flowers, Roses in particular, and the wild Dahlia. All these plants are carried to the town in large boats, which run down the course of the canal of the Viga. The place south of the town, where the vegetables, forage, and flowers arrive, affords a very picturesque and charming sight.

M. Leurat records here an observation regarding plants with swollen roots. He says that if one sows the seed of cultivated Radishes brought from Europe, one obtains in the shade and in well-watered ground, Radishes like those of Europe; but if, on the contrary, one sows the seed of "the Radish of the country," they grow without any enlargement of the root, for the subterranean stem (hypocotyl) is slender and of a uniform thickness. He thus obtained at the end of two months, in a soil very sheltered, well manured, and watered twice a day, Radishes with well-developed foliage; but of which the hypocotyl only measured 2½ inches in length, and had a uniform diameter of .09 to .1 inch. This axis had the upper part coloured red, corresponding to the portion which ought to have swollen. He supplies an illustration.

The arrest of the swollen part, he adds, is easy of explanation. Mexico, having a uniform temperature from one end of the year to the other, and water being supplied in abundance by the gardener, the plant has no necessity to interrupt its growth during the winter. The winter at Mexico is characterised by cold nights, when the temperature falls to about freezing-point, while the days are warm; and not having need to make reserve food-materials, the Radish loses the habit of making it during the first

year's growth. The seeds of the country form, are, in fact, the seeds of Radishes originally brought from Europe, but which have immediately degenerated in response to the climate. It must, therefore, be constantly re-imported fresh from Europe. The same result occurs with Carrots, Turnips, &c.

Finally, there is another point deserving of observation. It has been supposed that certain European plants transferred to Mexico will not bear seed. Such is not really the case. What suggested the idea is the fact that fruit-trees, notwithstanding great care, as a rule only give very meagre results. M. Seurat believes that it is due to the fact that a large number of flowers are not fecundated in consequence of the absence of the insects necessary to insure pollination. *George Henslow.*

BELGIUM.

A COLLECTION OF CACTI.

DURING a recent visit to the houses of M. Fr. Delaet, at Contich, near Antwerp, I noted *Echinocactus Wislizeni*, 1½ foot across, with all the spines intact; *E. Grusoni*, even larger; *E. cylindraceus*, 1 foot across, with spines 4 inches long, red, and interlacing like snakes; and other plants of the same variety differing in the form and colour of the spines. I also saw *E. Wrighti*, with spines about 5½ inches long, and ending in a hook like those of *E. Wislizeni*.

E. rubrispinus was notable for the red-brown colour of its many thorns; beside it was a fine *E. Hasselbergi*, with four fruits full of seed. There was also a group of *E. ornatus*, the plants covered with small white spots, and having fine yellow spines. *Leuchtenbergia principis*, a very distinct plant: it has leaves or branches from 3 to 4 inches long, ending in a crown of spines or soft prickles, some over 5 inches long.

I was also attracted by *Echinocactus Monvillei*, covered with flower-buds; indeed, all the following plants have flowered, as their fruits prove: *Echinocactus hexaedrophorus*, *helophorus*, *acifer*, *multicostatus*, *m. Dowelli*, *turbiniformis*, *Orcutti*, *tenuiflorus*, *Jussieui*, *xiphacanthus*, *pentacanthus*, *Geissoi*, *longihamatus*; and *Echinocereus robustus*, *stramineus major*, *Röteri*, *rigidissimus*; also various species of *Mamillaria*, *Cereus*, and *Echinopsis*.

A group of *Pilocereus*, including *P. Dautwitzii*, *Hoppenstedtii* and *senilis* deserve mention.

In another house were *Phyllocacti*, bearing fruit, the result of crossing. Certain *Euphorbias* were nearly 6 feet high. M. Delaet also grows Agaves and Aloes well, and has a good plant of *Hechtia Ghiesbreghtii* with four floral racemes, each bearing very many small white blooms.

In the garden were some fine *Cereus*, some 10 feet across. In pans were many seedlings carefully tended; numbers of *Echinocactus Hasselbergi*, *E. m. Dowelli* and *Pilocereus similis*; in fact, about 400 varieties of all species were represented in numbers.

NURSERY NOTES.

MESSRS. WALSHAW & SONS, SCARBOROUGH.

Now that the floral decorations and requirements of a first-class watering-place are no longer a luxury, but what I think might safely be said, a necessity, the undertaking of catering for such an enormous demand as the season at Scarborough entails on the florist requires a large outlay and a great deal of forethought. A visit to the old-established nursery of Messrs. Walshaw during last week showed clearly that, although the tastes of the varied classes of visitors are in many cases quite different, still for all and every one the thing desired seemed to be at hand at this establishment. In passing through some of the many ranges of glass, the following batches were noticed as being larger than one sees usually in provincial nurseries. On entering the main gate, the visitor passes into a very lofty vestibule, tastefully arranged

with decorative and flowering plants, and standing here he is at once charmed by a gorgeous display of what Mr. Walshaw believes to be a coming plant to the florist, namely, a large house full of Cannas; these are arranged on the floor down each side of a wide span-roofed house, and the effect is more telling, as the house being, as it were, built on the side of a hill, and sloping towards the main door, the visitor is enabled to get a full view at once, and the effect is certainly very fine. Grown as one sees them here, it is quite easy to corroborate your correspondent "H. R. W., Stuttgart," who says in your issue of the *Gardeners' Chronicle* of July 16, that the Cannas have risen to a foremost position among summer-flowering plants. Mr. Walshaw, having procured these direct from a noted continental raiser, the collection includes some fine varieties previously unflowered in England. Among the best known kinds at present in bloom was seen Alphonse Bouvier, foliage very fine, and flower vivid crimson; Fratelli Cattaneo, bold red foliage, and very deep crimson flower; Giardino Treves, a clear yellow flower, spotted with very bright red; Moritz Jacob, another good yellow; President Carnot, crimson flowered; Sophie Buchner, a good scarlet; Villa Adda, a dark foliaged variety, with distinct flowers of a bronzy-red colour. Italia and Austria were also noted, showing, among upwards of fifty other varieties, strong spikes; and the house bids fair to give a good display for some time still to come.

Passing into the side ranges, an enormous batch of *Lilium longiflorum* var. *Harrisii* was seen, one house being filled with some hundreds of these just expanding their blooms.

A large span-roofed house of Double Pearl Tuberoses could be detected before you got into it, the powerful scent permeating the houses for some distance, and inside the house containing them so as to be almost overpowering. Many thousands of these are grown in succession, it being greatly in demand. Following this another span-roofed house was crammed with grand Kentias; great numbers of these are sent out for the decoration of the enormous ball-rooms and halls during the Scarborough season. Most varieties of Roses are well done here, but an especially fine lot of Teas, including all the up-to-date varieties, were there; some grand batches of choice Teas in pots were coming on for autumn distribution. Carnations, both border and tree varieties, were strongly in evidence; of the latter class upwards of 10,000 are grown for autumn sale. A plant well worth noting is here grown in quantity, namely, *Asparagus Sprengeri*: one batch in large pots is grown for cutting from, in preference to *Smilax* (*Myrsiphyllum asparagoides*), and when once used I was told it was always requested. A quantity of decorative Ferns were there grown in low, span-roofed houses near the glass, also nice clean batches of *Boronias*, *Genistas*, zonal *Pelargoniums*, &c., for autumn and winter work were coming on. In the nursery department Roses are again well done, and *Souvenir de la Malmaison*, of which one so often sees badly-developed flowers, was here in thousands, of perfectly-formed flowers, a quantity ready cut for sending out, making a grand display.

Among new plants outside were noted two species of *Olearia*, namely, *O. dentata*, a strong-growing shrub, with distinct, serrated foliage of a glaucous covering, and *O. nitida*, a dwarfer shrub, with dark foliage. These will both prove, I think, useful additions for seaside planting.

Large quarters of fruit-trees, Conifers, &c., were also observed in good character. The larger outside nursery, situated at Scalby, some two miles out of Scarborough, is well worth visiting, as it is a pleasant drive out, and can be easily reached from the village of Scalby. The home-nursery being at the end of the valley, one of the favourite walks of the Scarborough visitors, it is very easy of access, and is visited by thousands during the season.

At the entrance to the offices great alterations are just being commenced, the present accommodation being quite inadequate, it is therefore proposed to build new offices to facilitate the despatch of business. *John Clayton.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JULY 26.—*Present*: Dr. M. T. Masters (in the Chair); Mr. Bennett-Poë, Dr. Russell, Mr. Veitch, Rev. George Henslow, Hon. Sec.

Tomatos and Sleepy Disease.—Plants suffering from this now not uncommon complaint were forwarded to Dr. William G. Smith for examination. He reports as follows:—"My observations agree with those of Mr. Massee given in the *Gardeners' Chronicle*, June 8, 1895. I have already seen several cases of this disease this season. I do not see an easy way of getting rid of the fungus. Mr. Massee's suggestion of liming the soil seems a good one, but I have had no experience."

Outgrowths on Potatoes.—Mr. Sutton sent some tubers having curious excrescences upon them, received from Mr. Kerr of Dumfries. They were reserved for examination.

Asters Diseased.—Mr. W. P. Wright, of Fairview, Willesborough, Ashford, Kent, sent some specimens, and observes that "Growers of Asters in East Kent, especially in the Dover district, are in trouble over an Aster disease, which destroys thousands of plants. Some go off directly they are put out, others at a later stage. I found small white grubs in the lower part of the stems, and I do not feel any doubt that they are the cause of the mischief." In the *Naturalist*, the organ of the Yorkshire Naturalists' Union, there is a paper by Rev. Hilderic Friend on this subject. The worms in question are of the family of Enchytreidae, a group of annelids. Mr. Friend discovered a presumably new form in China Asters, and named it *E. parvulus* on account of its minuteness. A full description of the worm is given in Mr. Friend's paper. There is nothing to be done but consign the plants attacked to the flames. An account of the Aster worm will be found in the *Gardeners' Chronicle* for August 14, 1897, p. 89, with figure.

Melon with Seeds Germinating.—Mr. Veitch read a letter from Mr. A. McKellar, gardener to H.R.H. the Prince of Wales, Sandringham, describing a Melon sent to Marlborough House, which was full of young Melon plants, quite green. They were plunging their roots into the pulp, and feeding upon it. Similar growths have often been seen in Lemons and Oranges, as well as Cucumbers, Pumpkins, Papaws, and other fleshy fruits. The cause appears to be that the fruit has been kept some time in a warm atmosphere.

AUGUST 9.—The lessened attendance of visitors, and the comparative paucity of exhibits, marked the end of the season in London, and the waning of summer. Dahlias, Gladiolus, Montbretias, Lilies, and Gaillardias helped to impart gaiety to the Drill Hall; and the fine exhibits of fruits by Messrs. J. Veitch & Sons and Messrs. T. F. Rivers & Son, to afford food for comment by the fruit connoisseurs. Orchids were extremely few in number.

Floral Committee.

Present: W. Marshall, Esq. (in the Chair); and Messrs. John Fraser, O. Thomas, H. B. May, C. T. Druery, R. Dean, G. Stevens, W. Howe, J. F. McLeod, C. J. Salter, C. E. Pearson, J. Walker, C. E. Shea, H. Turner, and J. Fraser.

Her Majesty the QUEEN, Windsor (gr., Mr. Owen Thomas), showed a collection of Nepenthes in considerable variety, in large and small examples. We noted plants of the following varieties with fine pitchers, viz., Amesiana, Mastersiana, Morgania, Mixta, Curtisii and C. superba, Northiana, Burkei, Hookeriana, Dickinsoniana, and Curtisii. Plants of Acalypha Sanderi were interspersed, and Maidenhair Fern formed the groundwork (Silver-gilt Flora Medal). Mr. O. Thomas showed Nelumbium speciosum, var. album, flowers white, with yellow stamens and light green disc (First-class Certificate). (See *Gardeners' Chronicle*, Oct. 1, 1887, fig. 88.) He also showed Abutilon Swarzi, with a pronounced white variegation on the leaf.

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, showed a handsome collection of bulbous plants, and cut blooms of the same. We noted of Lilies L. Thunbergianum venustum, a bright orange scarlet flower; L. auratum, L. a. rubro-vittatum, L. a. Witte, a very handsome form, segments white, with a yellow middle-line; L. Henryi, a yellow Turk's-cap, and an abundant bloomer; L. Batemanniae, orange-scarlet; and others. Montbretias formed another feature, and there were M. Gerbe D'Or, M. crocosmiflora, M. c. Soleil Couchant, M. c. Phare, M. c. Etoile de Feu, and M. Pottsi, all very pretty, and in colour, ranging from scarlet to yellow. Various Gladioli were shown, including Souvenir, a bright red; Etna, dark crimson; and Lafayette. The remainder of the group consisted of Tritomas, Carnations, Brodiaeas, including B. Orcuttii, a flower of a bright blue tint; Sternbergia macrantha, a dwarf, bright yellow flower, of Crocus-like growth—very showy (Silver Banksian Medal).

Messrs. KELWAY & Sons, Langport, Somerset, staged a large miscellaneous collection of hardy flowers, and more especially of Gladiolus, in which genus they are *facile principes*. We remarked the pretty blue Statice latifolia, an excellent subject for cutting; Gaillardia Vivian Grey, a beautiful yellow self; Eryngium dichotomum, a pretty, small-flowered species; Bupthalmum salicifolium, Asclepias incarnata, Michauxia campanuloides, flowers large, simple, white, and arranged on a long, stout-branched spike. The Gladiolus consisted of seven stands of choice varieties. A whole stand was set up of new varieties (fourteen), and one only obtained

an Award of Merit, viz., G. W. B. Child, a dull, yet distinct-looking type of flower, of the Nancianus form, in colour a dull crimson, covered with dense spotting. There were several other fine flowers that took the fancy of the visitors in preference to the committee's choice. A Silver Flora Medal was awarded for the Gladiolus.

J. VEITCH & Sons, Limited, The Royal Exotic Nursery, Chelsea, showed a collection of cut blooms of hardy, perennial, and annual plants, a particularly showy lot. We remarked the dwarf hybrid Candytuft "Carmine," very rightly named; Stachys coccinea, rarely seen; the White Spiral Candytuft; Hunnemannia fumariaefolia, a Poppy-like flower of a pure yellow tint; Chrysanthemum luteum, with bright yellow rays, and purplish-brown disc, distinct; Shirley Poppies in variety; Lavatera, in white and pink varieties; the pretty pink-flowered Cosmos bipinnatus; Xeranthemum superbum, Godetia Gloriosa, of the deepest tint of crimson; G. Butterfly, white and crimson, and other Godetias; Scabiosa in variety; the pretty red-flowered Calceola coccinea, and Chrysanthemum inodorum plenissimum. The firm showed Carnation George Maquay, a white flower of fair quality, apparently an abundant flowerer. The petals are cupped, smooth, and numerous, and it is likely to be an excellent border variety. Forming part of their exhibit was a quantity of growths with flowers thereon, of Cornus macrophylla, of Eueryphia pinnatifolia, Pavia macrostachya, and Coprosma acerosa with small blueish berries.

Mr. M. PRICHARD, The Nurseries, Christchurch, Hants, showed a large collection of hardy herbaceous perennials as cut flowers, rich in diverse genera. Conspicuous was the violet-coloured Gladiolus Lemoinei Baron J. Hulot (Award of Merit), G. L. Venus de Milo, G. L. Etoile, and G. L. Vesuvius, of a rich crimson (Award of Merit); it is distinguished from all other varieties by its great length of spike, and consequently large number of flowers; the now rarely-seen Zauschneria californica, like a miniature Pentstemon; Dracocephalum virginianum, the blue-flowered Aconitum bicolor, Potentilla Hopwoodiana, Lobelia Milleri, the slow Helium grandicephalum striatum, Podophyllum Emodi, with two fruits (scarlet drupes), Peotstemon heterophyllus, Asclepias syriaca, A. tuberosa, and A. incarnata, besides a quantity of ordinary border species (Silver Banksian Medal).

Messrs. W. CUTBUSH & Son, the Nurseries, Highgate and Barnet, showed a collection of Sweet Peas too thickly set up, mostly consisting of new varieties, Phlox of new varieties and rich colours, bunches of Carnations and Picotees, &c. (Bronze Banksian Medal).

Messrs. W. PAUL & Son, Waltham Cross, Herts, had an extensive array of shrubby Phloxes in the best varieties, of which we may name M. Thibaut, rosy-crimson; Adonis, cerise; Hecla, violet and white; Oriental, lilac; Lotohair, rosy-crimson; Auguste Riviere, deep crimson; Fantome, violet and white centre; Lord Raleigh, deep blue; Le Mahda, rather deeper in tone; and Roxelane, rich red-purple. At the back of the table they had arranged a number of Hollyhock spikes, some of the flowers attaining to the florists' ideal. They also exhibited a quantity of flower-spikes of Yucca flaccida; and a seedling Yew named Waltham Golden, two plants 5 feet high. The variegation is effective, and the habit is reminiscent of the Irish Yew (Silver Flora Medal for the entire exhibit).

Messrs. WEBB & BRAND, Saffron Walden, showed Hollyhocks in variety, and they received a Bronze Flora Medal.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, filled a considerable amount of table with species and varieties of Nephrolepis, including rufescens var. triplinatifida, N. acuta, N. Faulkneri, a number of N. pectinata, arranged on a branching tree-stem very effectively; N. exaltata plumosa, and the type form, &c. (Silver-Gilt Banksian).

Messrs. SANDER & Co., St Albans, Herts, showed as new plants Begonia gemmata and B. conspicua, both being ornamental-leaved varieties of cissimil characters; and Furcraea Watsoniana (First-class Certificate), a plant with widely-expanded leaves of 3 inches in breadth and 2 feet in length, becoming horizontally poised as they get older; the central portion of the leaf consists of a creamy-white band, and a narrower band runs along each side at a quarter of an inch distant (see *Gardeners' Chronicle*, April 23, 1898, p. 243).

R. SISLEY, Esq., Ockford, Godalming, showed Carnation blooms, but none was recognised by the committee.

Border Carnations in variety were shown by AUBREY SPURLING, Esq.

Codium Wentworthianum was shown by Mr. Hughes, gr. to Lord FITZWILLIAM, Wentworth Woodhouse, Rotherham, said to be a cross between interruptus and Weissmanni. It was showy in its yellow and green.

Mr. J. DOUGLAS, Edenside, Great Bookham, Surrey, showed a number of Carnation seedlings of fine quality, but the only one graced with an Award of Merit was a very dark crimson flower named Nox, raised by Mr. Martin Smith; eighteen varieties were of Mr. Smith's raising, and four Mr. Douglas's.

Mr. STEPHEN TRESEDER, Nurseries, Cardiff, showed Tea Rose Mrs. Stephen Treseder, a creamy-white variety, of a form somewhat resembling Niphetos.

T. B. HAYWOOD, Esq., Woodhatch Lodge, Reigate (gr., Mr. Salter), showed Chrysanthemum Mlle. Marie Masse, the natural growth of which was said to be 2½ feet high, and the habit compact. The colour of the bloom is light-rose, whitening with age (Award of Merit).

Mr. J. CROOK, gr., Forde Abbey, Chard, showed a quantity of flowers of Gloriosa grandiflora.

A. B. FREEMAN-MITFORD, Esq., Batsford Park, Moreton-in-the-Marsh, exhibited, floating in broad pans of water, twelve varieties of Water-Lilies, viz., Nymphaea Marliacea chroma-

tella, pale-yellow; N. flammea, crimson; N. Marliacea albida, N. Marliacea rosea; N. gloriosa, N. fulva, N. odorata, N. ignea (Award of Merit), N. Laydekeri, and N. rubro-punctata (A Silver Flora Medal for the collection).

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House Acton (gr., Mr. J. Hudson), exhibited a tray of Water-Lilies, including Nymphaea gloriosa, N. Seignouretii, pink; N. Andreana, crimson; N. odorata sulphurea grandiflora, white and yellow; N. alba, N. odorata rosea, N. Laydekeri fulgens, crimson; N. lucida, N. aurea, N. Marliacea chromatella, &c., N. stellata, blue, grown out of doors, and others, in all 24 varieties (Silver Banksian Medal).

W. ROBINSON, Esq., 63, Lincoln's Inn Fields, W.C., showed a panful of flowers of Nymphaea alba, N. chromatella, N. rosea, N. albida, &c., in fine stages of development (Bronze Flora Medal).

LORD HILLINGDON, Hillingdon Court (gr., Mr. Allen), showed thirty-six bunches of border Carnations, most of which were of more than ordinary good quality as such, and the colours most varied (Bronze Banksian Medal).

Mrs. ABBOTT, South Villa, Regents Park, N.W. (gr., Mr. G. Kelf), showed a large group of stove-plants, mostly foliage, enlivened by Lilies and Cannas, and of which Palms and Caladiums formed the back rows (Silver-gilt Banksian Medal).

EARL PERCY, Syon House, Brentford (gr., Mr. G. Wythes), showed about forty plants of white and blue-flowered Campanula pyramidalis, capitally grown and flowered in 8-inch pots from seed sown eighteen months ago (Silver Banksian Medal).

Dahlias.—Retarding as the summer season has been, with its alternations of heat and cold, sunshine and darkness, Dahlias have come on, and a good many blooms were produced on Tuesday last, including the show Cactus and Pompon varieties. Mr. J. WALKER, nurseryman, Thame, had a collection of sixty show varieties. The blooms were small, because we are in early August, but the quality of many was decidedly good. By drawing an inference from this collection, it may be said that the following varieties are likely to be seen in good character when the show season comes on: The Hon. Mrs. P. Wyndham, Nubian, Plutarch (fancy), Mr. J. Harris, Ethel Britton, a flower of great delicacy; Goldsmith, W. Powell, and R. T. Rawlings, two of the most useful yellow selfs; Arthur Rawlings, S. Mortimer (fancy), John Wyatt, Mrs. Gladstone, one of the most constant of show Dahlias; T. J. Saltmarsh, John Standish, deep bright scarlet, and Willie Garratt. Then of Cactus varieties, this well-known firm had some thirty-six blooms, those of the best Cactus character and forming also a collection of most desirable varieties were: Starfish, one of the very best; May Service, Britannia, Night, Arachne, Alfred Vasey, Capstan, and Ruby. Then some bunches of pretty Pompon varieties formed part of the Thame collection: Hypatia, Opal, Sammy Keith, Darkness, and Bacchus (Silver Banksian Medal).

Mr. S. MORTIMER, Swiss Nursery, Farnham, another well-known grower, had a collection of show and Cactus Dahlias. The best among the former were Lottie Eckford, Rebecca in a self form, Perfection, W. Powell, John Walker, John Hickling, another good yellow self; and Duchess of York. Some of his Cactus varieties were remarkably good; out of seventy-two blooms the following were the very best:—Charles Woodbridge, Harmony, Britannia, Arachne, Lady Penzance, and Starfish. There is every reason to believe the next two or three years will see a remarkable break in the Cactus type. Beautiful as are such refined forms as Charles Woodbridge, Starfish, and others, flowers of the Arachne type, with long, thin, pointed florets a little twisted are likely to come to the fore. There is a marked individuality of character about them, and an elegance in their very eccentricity of development. A good white is a great desideratum. Keynes' White is the best to-day, but like all the white Cactus varieties, it is apt to come flat-petalled. The coming season will witness the advent of many novelties in Cactus Dahlias (Silver Banksian Medal).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. J. Chapman, W. Cobb, E. Ashworth, J. Jacques, E. Hill, J. Douglas, H. M. Pollett, H. Ballantine, and J. Gurney Fowler.

Though but few exhibits were staged, three subjects worthy of awards were found. Baron Sir H. SCHRODER, The Dell, Staines (gr., Mr. H. Ballantine), showed flowers of Sobralia Sanderiana, an imported species, with flowers nearly as large as those of S. macrantha. The sepals and petals were French white, tinged with rose; the tube of the lip similar in colour to the petals, the throat orange, and the broad front of the lip claret-crimson; a distinct and showy species (Award of Merit). Baron SCHRODER also showed a spike of the original Cypripedium Stonei platytanum.

Capt. G. W. LAW-SCHOFIELD, New-Hall-Hey, Rawtenstall, Manchester (gr., Mr. Shill), showed Odontoglossum crispum Lehmanni, Schofield's variety, a charming novelty of the typical shape of Lehmann's O. crispum, which has uniformly displayed segments and a broadly ovate labellum, totally different from that of any other form. The sepals were white, slightly tinged with rose, and each bearing from three to five dark, ruby-red spots. The broad, flat lip, which was slightly toothed at the margin, was of a bright ruby-red, broadly edged with white, and bearing a cowslip-yellow crest, with some fine purple lines (Award of Merit).

Messrs. HUGH LOW & Co., Bush Hill Park, showed Cypripedium × Olivia (tonsum × concola), a distinct hybrid, in form much resembling C. tonsum, but of a clear ivory white, slightly tinged with rose (Award of Merit); a grand form of Oncidium papilio, closely resembling that figured as O. P. Eckhardt; two plants of Cattleya Gaskelliana alba, and one of a fine dark form of the same species.

M. E. ZÖLLINGER-JENNY, Villa Greten, Wollishofen, near Zurich, sent *Vanda Sanderiana rosea*, a noble form, with the petals and the upper sepal of a warm, light rose colour, with a few claret spots at the base, the lower sepals and lip being veined and tinged with brownish-claret colour.

Captain THOS. A. JULIAN, Woodside, Plymouth, sent a very peculiar light form of *Cattleya Warszewiczii* with bluish-white flowers mottled slightly with rose colour, instead of the dark purplish hues usually seen in the species. Mr. JAS. DOUGLAS, Great Bookham, Surrey, showed *Dendrobium formosum*, Edenside variety, with very large white flowers, having rich orange markings on the lip. T. B. HAYWOOD, Esq., Woodhatch, Reigate (gr., Mr. C. J. Salter), showed a fine spike of *Staurosis lissochiloides* (*Vanda Batemanii*).

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. F. F. Rivers, R. Parker, M. Gleeson, J. H. Veitch, G. Bunyard, J. Cheal, J. Wright, A. Dean, W. J. Empson, G. Wythes, J. Balderson, F. Q. Lane, G. Reynolds, G. Norman, R. Fife.

Mr. J. Crock, gr. to — EVANS, Esq., Forde Abbey, Chard, sent a handsome green-flesh Melon, named Forde Abbey Seeding, but it was not sufficiently ripe.

Mr. Capp, gr. to Sir W. PEARSON, Crawley, sent a pair of Melons, Capp's seedling, but these were soft and over ripe.

From Mr. BLAKE, The Gardens, Clandon Park, Guildford, came a dish of fine *La Versailles* red Currants. The committee regard "Comet" from Jersey, shown at the previous meeting, as the same variety. It was desired that both should be tried at Chiswick.

Messrs. KELWAY & SONS, Langport, Somerset, sent small plants about 12 inches in height (of what they term the Strawberry Raspberry (a Japanese species of *Rubus*), and also some gathered fruits. These are about the size and have much the appearance of large *Arbutus unedo* fruits, but they are redder, softer, and sweeter, yet comparatively devoid of flavour. That is unfortunate, as the fruits are handsome, and if well flavoured would be a good addition to the dessert. The committee wished to have further information as to its origin, regarding it rather as a species of *Rubus* than a hybrid. The foliage is small and lanceolate, rather like the Raspberry, but the stems are spiny, like those of the Blackberry. The fruits are borne singly and erect, and not in clusters. No award was made to it.

Mr. CARMICHAEL, Edinburgh, sent a dish of his new Strawberry Britannia, but a distressingly poor sample. The fruits seem to have fair flavour, and to be late, but it needs to be grown in the south to secure a fair trial.

Messrs. JAS. VEITCH & SONS, Ltd., sent a quantity of branches of their new hybrid Raspberry. This is the product of crossing *Belle de Fontenay* Raspberry with the common Blackberry. The plants have strong Raspberry-cane-like growth, but the stems are spiny. The fruits are borne on laterals freely, like Raspberries, but are nearly black; are large as fine Strawberry fruits, but more acid. The fruits do not part from the stem readily, therefore will not bear pulling as Raspberries do. It is an interesting hybrid, and it may be capable of improvement.

Finally came from Messrs. VEITCH & SONS the most remarkable collection of bush-fruits ever seen at any time. Not only were their numbers, but the samples were exceptionally good. It was no wonder that the committee unanimously recommended the Award of a Gold Medal to this superb collection. It included 106 wooden trays of Gooseberries, distinct; 12 the same of red Currants, 6 of white ditto, and 6 black, with one pink variety. There were also various early Apples and Cherries, and some fruiting-branches of Gooseberries; and red and white Currants were also staged. During the afternoon, so attractive were the Gooseberries, that their merits for the table were severely tested. The result seemed to be that most were regarded as being first-rate; certainly, after seeing this collection, it will be no wonder if very great stimulus be not given to the cultivation of what is the most profitable, wholesome, and delectable of all bush fruits. Of small reds, delicious were Early Red Hairy, Warrington, Champagne, Scotch Nutmeg, and Ironmonger. Of small yellows, Rumbullion, Golden Drop, Yellowsmith, Yellow Champagne, Early Sulphur, and the new pale Langley Gage, one of Mr. Seden's best-flavoured varieties. Of small greens, Hedgehog, Pitmaston Greengage, Early Green Hairy, and Green Gascogne. Of large reds, Forester, Dan's Mistake, Crown Bob, Lancashire Lad, Whinham's Industry, Duke, Highlander, Askender Bey, Haslem, Talfourd, Beauty, Lord Derby, Lion's Provider, and Sion were very fine and well coloured. Of large yellows and whites, Langley Beauty, very handsome and rich flavoured, also of Mr. Seden's raising, High Sheriff, Tiger, Pretty Boy, Gipsy Queen, Careless, Railway, Drill, Hit or Miss, Leader, and Great Eastern; and of large greens, Whitemith, Gretna Green, Progress, Ostrich, Success, London City, Jenny Lind, Stockwell, and Ledgermain. The finer red Currants were Cherry, *Le Versailles*, *La Constante*, and Warner's Grape. Of whites, White Crystal, Transparent, Dutch, and Dutch Cut-leaved; and of blacks, Baldwin, Lee's Prolific, and Black Grape.

Mr. W. ROUPPEL, Norwood, brought dishes of Apples Gladstone, ripe, and quite pleasant eating; and Noble Peach, the latter not yet ripe. A vote of thanks was awarded.

Mr. AMIES, Ashford, sent an ordinary sample of Scarlet Runner Beans.

Mr. A. DEAN brought a very handsome sample of White Snowball Turnips to show that the variety named Model, granted an Award of Merit at the previous meeting, was but Snowball. The sample now brought was a better one than the one seen the previous meeting. It was suggested that a

trial of Turnips be sown now at Chiswick. Several varieties of dwarf Beans were sent up from Chiswick, but the committee wished to see them growing in the gardens. Messrs. HARRISON & SONS, Leicester, sent a collection of twenty assumed named varieties of Broad and Long-pod Beans; the best were Emperor a Green Long Pod, Exhibition Long Pod, Leviathan or Seville, Green Windsor, and Harlington Windsor. The types, however, were few (a Vote of Thanks was awarded).

Mr. J. Miller, gr. to Lord FOLEY, Ruxley Lodge, Esher, was awarded a Silver Knightian Medal for a handsome collection of fruit, including good Melons, Sutton's Imperial, Blenheim Orange, and Hero of Lockinge. Peaches: Royal George, Alexandra, Noblesse, and Violet Hative, from under glass; and Waterloo and Alexander, from outside walls. Fine Early Orange, and Hemphirke Apricot, Morello Cherries, Jefferson Plums and Gooseberries.

A very interesting collection of fruit was staged by Mr. Kelf, gr. to Mrs. ABBOTT, South Villa, Regent's Park, and a Silver-gilt Knightian Medal was unanimously awarded. This collection, whilst so excellent, had the merit of being grown within two miles of Charing Cross. There were fine trees in pots carrying heavy crops of fruit of Jefferson, Emperor, and Coc's Golden Drop Plums, and dishes of these with McLaughlin's Gage, Yellow Magnam Bonum, Transparent Gage, Kirko's Reine, Claude de Comte Althaus, and Green Gage Plums, all capital samples; also fine Royal George Peaches, several dozens; and Barrington and Bellegarde do.; Monarch and Seedling Melons, &c. This collection did the grower high credit.

Messrs. T. RIVERS & SON, Sawbridgeworth, had Superb Cherries and Early Rivers' Nectarine. The Cherries were Geant de Hedelfrangers, wonderfully fine; Blackheart, Bigarreau de Guben, Monstreuse de Mezel, Emperor Francis, and Olivet; also, there were fine Golden Transparent and Grand Duke Plums. A Silver Banksian Medal was awarded.

REDHILL, REIGATE, AND DISTRICT CARNATION AND PICOTEE.

JULY 29.—The first show of the above Society was held in the grounds of "Caberleigh," Redhill, on the above date, and judging by the number of competitors, and the high quality of blooms staged, the show could only be pronounced an unqualified success. Nor could this be otherwise, represented as it was by such giants of the Carnation world as Mr. Martin Smith, of Hayes (whose blooms were, as usual, splendidly staged by Mr. Chas. Blick); Mr. Jas. Douglas, of Great Bookham; Mr. Harry Turner, of Slough; and Mr. Robert Sydenham, of Birmingham; together with most of the leading amateur growers in the South.

It is much to be regretted that the day was very cold, and although the threatening rain did not descend, it was more like March than July, and the attendance was therefore not so good as it might have been.

In class 1, for twenty-four blooms, selfs, fancies, bizarres, or flakes, Mr. MARTIN R. SMITH was a good 1st, with a splendid stand of Purity, Don Carlos, Mrs. Grey Buchanan, Cecilia, Bomba, Helmsman, Nora Creina, Alexandra, also a sport from the latter, Blondin, Olga, The Cornet, Hidalgo, The Naiad, Goldilocks, Orion, St. Albans Seedling, Gordon Lewis, Rheims, Rob Roy, Autocrat, and Geo. Neville.

In class 2, for twelve Picotee blooms, white or yellow ground, Mr. MARTIN SMITH was again well to the front, with superb blooms of Lily Duchess, Badminton, Duke of Alva, Lady Bristol, Dinorah, Hesperia, Heather Bell, Hygeia, Edith Volage, His Excellency, and Fashion.

In class 3, for twelve Carnation blooms, Mr. A. J. ROWBERRY, of South Woodford, was 1st, with Orestes, Mrs. Sidney H. Diver, Dick Donovan, Cardinal Wolsey, Geo. Cruickshank, Mrs. Eric Hambro', Endymion, Ceres, Mrs. Prinsep, The Czar, Monarch, and Miss Audrey Campbell.

In class 4, for twelve Picotees, white or yellow ground, Mr. S. A. WENT turned the tables on Mr. A. J. ROWBERRY, beating him with a capital stand of Badminton, Dervish, The Gift, Alice Mills, Voltaire, Golden Eagle Seedling, Florrie Henwood, Favourite, Jessie, and Mrs. Sharpe.

Class 5, for six Carnation blooms, Mr. AUBREY SPURLING, of Blackheath, was 1st.

In classes 7 and 8, for three Carnation and three Picotee blooms respectively, Mr. B. A. M. MORRIS, of Merstham (the Hon. Secretary of the Society), carried off the principal honours. Mr. R. SYDENHAM brought (as an experiment) most of the blooms with which he had taken the leading prizes in the single-bloom classes at the Crystal Palace on the preceding Wednesday, his idea being that owing to the cold the blooms had very slowly developed, and would consequently last longer when cut. The theory was borne out by the result, for he nearly cleared the board with them in the corresponding classes here.

For a vase of Carnations, &c., Mr. S. A. WENT was to the front with a splendid exhibit. For three sprays of Carnations, Mr. A. J. ROWBERRY was 1st.

Mr. AUBREY SPURLING carried off the Challenge Cup for twelve varieties of Carnations, three trusses of each; and the special prizes offered by Mr. R. Killick for twelve Carnation blooms cut from the open border, and staged without dressing, were well contested, and taken by Mr. U. V. CHARRINGTON, Dr. HADLEY, and A. J. ROWBERRY.

For the best table decoration, Mr. ST. B. SLADEN was 1st. Mr. CUTBUSH, of Highgate, staged a large collection of Sweet Peas and Carnations; Mr. F. G. FOSTER, of Havant, a magnificent stand of Sweet Peas; Mr. H. V. CANNELL, of Swanley, Cannas, Sweet Peas, and Carnations; and Mr. JAS.

DOUGLAS, a fine exhibit of new Carnations. Last, but not least by no means, was a lovely group, set up by the permission of LILY, Duchess of MARLBOROUGH, consisting of Malmesbury Carnations, foliage plants, and Ferns.

NORTHAMPTON HORTICULTURAL.

AUGUST 1, 2.—This Society is to be congratulated upon the splendid exhibition which was held in the grounds of Althorp Park by kind permission of the President of the Society, Lord Spencer, K.G. Liberal prizes were offered, and, considering the late character of the season generally, the exhibits were very fine, the general opinion being that the show was the best of those held in recent years, the stove and greenhouse plants and the groups being particularly commendable.

Plants.—For twelve stove and greenhouse plants, 1st, Mr. JAMES CYPHER, of Cheltenham, with huge plants of *Kentia Belmoreana*, *K. australis*, *Latania Borbonica*, *Croton montefontanensis*, *C. Victoria*, *Statisia profusa* (very fine), *Stephanotis floribunda*, and some good *Ixoras*, Prince of Orange and Williamsii. He was closely followed by Mr. FINCH, Coventry, with a collection consisting of *Latania borbonica*, *Kentia Fosteriana*, *Cycas revoluta*, *Kentia australis*, *Erica Parmentieriana*, *Allamanda grandiflora*, *A. nobilis*, *Bougainvillea glabra*, with some good *Codiaeum*, and *Statisia profusa*. Mr. VAUSE, Leamington, was 3rd, with some fine *Kentias*, *Codiaeums*, and *Allamandas*.

Groups.—For a group of miscellaneous plants arranged for effect, in a space of 20 by 12 feet, Mr. J. CYPHER was likewise 1st, with a group tastefully arranged with a Phoenix in the centre, and around it *Humea elegans*, *Codiaeums* in variety, *Caladiums*, *Lilies*, *Orchids*, *Oplismenus*, *Francoa ramosa*, *Asparagus*, *Ferns*, *Pilea muscosa*, and *Palms*, making a very graceful group that was much admired. Mr. VAUSE, Leamington, was 2nd, with a group consisting amongst other things of cork bridges, but it was much heavier in arrangement, in fact, too many plants were employed. In this group a plant of *Acalypha Sanderiana* was noted, the other plants consisting of *Humea elegans*, *Lilies* in variety, *Hydrangeas*, *Dracenas*, *Anthuriums*, *Ixoras*, *Adiantums*, &c.

For Six Exotic Ferns, Mr. W. Pearce, gr. to S. LODGE, Esq., Floore House, was 1st, with grand specimens of *Adiantum cuneatum*, *Dicksonia arborescens*, *D. antarctica*, *Platynerium alcorni*, *Davallia Mooreana*, and *D. fijiensis*; Mr. COPSON was 2nd, his collection containing a good specimen of *Gymnogramma chrysophylla*.

Six Stove and Greenhouse Plants.—In this competition, Mrs. PHIPPS (gr., Mr. COPSON), was 1st, with *Kentia Belmoreana*, *Livistonia chinensis*, *Dracena indivisa*, *Swainsonia Osborni* var. *alba*, *Pelargonium Alexandra Dupree*, and *Stephanotis floribunda*; Mr. PALMER was 2nd, with a lot which included a good plant of *Kentia Fosteriana*.

For Eight Table Plants, Mr. HOLLAND was a good 1st, with nice plants of *Bougainvillea Sanderiana*, *Cattleya Gaskelliana*, *Pandanus Veitchi*, *Geonoma gracilis*, *Codiaeum Golden Ring*, *C. Aigburthianse*, and *Dracena Jamesi*. Mr. COPSON had the best *Coleus*, and Mr. BEARD was 1st for *Fuchsias*, and Mr. REEVE took premier honours for single-flowered *Begonias*, and Mr. COPSON was again 1st for zonal *Pelargoniums* and for *Gloxinias*, and Mr. REEVE was 1st with *Cockscombs*.

Table Decorations, Cut Flowers, and Bouquets.—For the best arrangement for table decoration on a space 9 feet by 5 feet, Lord RENDLESHAM, Rendlesham Park, Suffolk (gr., Mr. H. Roger), was 1st, with a beautiful arrangement of yellow and pink-flowered Carnations, *Asparagus plumosus*, and Grasses arranged with six dishes of fruit, consisting of Grapes, Nectarines, and Figs. The table was much admired for its lightness, and the nice blending of the colours. There were several competitors, Mr. CYPHER being 2nd, and Mr. JAMES 3rd. This class has increased very much in popularity here the last few years. Messrs. JOHN PERKINS & SONS, Northampton, showed the best bouquet, and were followed by Messrs. THOMAS PERKINS & SON, Northampton.

Roses.—The best twenty-four Roses were shown by Messrs. J. PERKINS; Messrs. THOMAS PERKINS being 2nd. Messrs. THOS. PERKINS & SONS, Northampton, was likewise 1st for twelve Teas.

The non-competitive stands attracted much attention, Messrs. JOHN PERKINS having a good stand of Sweet Peas, *Lilium auratum*, herbaceous flowers, &c.; Messrs. THOMAS PERKINS had a very similar group; and Messrs. HINTOS, Warwick Nurseries, had a good stand of Sweet Peas, which tends to show how very popular this pretty sweet-scented flower is in the Midlands; other groups were staged, but want of space will not permit me to give them the attention they deserve.

Fruit is invariably well shown at this show, and this year it was very good. For a collection of eight varieties, open to all England, the Earl SPENCER (gr., Mr. S. Cole) was 1st with a huge Melon, *Ingestre Hybrid*, rather too large; Grapes Muscat of Alexandria and Madresfield Court, very fine in form and colour; Lord Napier Nectarine, Queen Pine, Prince of Wales Peach, Sir Joseph Paxton Strawberry, and Brown Turkey Figs. The Marquis of NORTHAMPTON (gr., Mr. J. Hayes), was 2nd.

For six dishes of fruit, Pine excluded, Mr. COLES was again 1st, with *Ingestre Hybrid* Melon, Madresfield Court, and Muscat of Alexandria Grapes, Pitmaston Orange Nectarine, Barrington Peach, and Brown Turkey Fig; Mr. HAYES was again 2nd.

For three bunches of black Grapes, Mr. CHILD was 1st, with good bunches of Madresfield Court, and he was also

1st for three bunches of white Grapes, having good Muscat of Alexandria.

Mr. HOLLAND took chief honours for six Peaches, and also for six Nectarines. Mr. HAYES had the best Raspberries; Mr. COLE was 1st for Cherries; and Mr. KIGHTLY was 1st for Strawberries; for Gooseberries Mr. KIGHTLY was again 1st, and Mr. F. Hayes took chief honours for Currants.

Vegetables.—There is always a strong competition in the vegetable section, and this year was no exception. For a collection of twelve kinds, Mr. B. WENTWORTH VERNON, Stoke Bourne (gr., Mr. Dymock), was 1st with a fine collection of the following varieties:—Cauliflower Autumn Mammoth, Blood-red Beetroot, Autocrat Pea, Cranston's Excelsior Onion, Matchless Cucumber, Early White Milan Turcip, James' Intermediate Carrot, Giant White Celery—very good; Best-of-All Runner Beans, Globe Artichoke, Supreme Potato, and Perfection Tomato. The Earl SPENCER was placed 2nd; his collection was superior in Carrots and Onions.

For a collection of nine kinds, open to Northamptonshire, Mr. B. WENTWORTH VERNON was again 1st with good specimens of much the same varieties as those noted in the larger class, but including Pea Magnum Bonum—very good; and French Bean Canadian Wonder. Mrs. PHIPPS had the best Tomatoes; Mr. KIGHTLY was successful in Sutton's competition, and Mr. DYMCK was 1st in Messrs. Perkins' and Messrs. Wells' prizes.

The Amateurs' and the Cottagers' competitions were well contested. Too much praise cannot be given to the officials and Mr. Troup (the hon. sec.) for the labour bestowed in bringing the show to a successful issue; and the labours of the judges met with very general satisfaction. H. K.

THE ROYAL SCOTTISH ARBORICULTURAL IN THE FOREST OF DEAN.

AUGUST 2.—The members of the above society arrived at Speech House Road shortly before midnight on the above date, proceeding thence by road to the neighbouring hotel. The accommodation being limited, part of the company camped out at the rear of the hotel in tents provided for the occasion.

An early start was made on foot the following morning to the Kensley enclosure, for the purpose of inspecting the process of regenerating the Oak by means of planting out lines of seedlings in openings made by the removal of badly thinned trees. Naturally enough, criticism was the order of the day; and after allowing for the provisions of the working-plan drawn up by Mr. Hill (of the Indian Forest Service) in 1897, it seemed to us that a bolder system of felling was necessary to obtain satisfactory results. The Larch is also being extensively planted, and appears to thrive remarkably well in the district generally. In the afternoon a long drive in the Ruardean district was taken, the nature of the country necessitating long journeys on foot where the brakes were unable to proceed. The party was joined by Mr. Stafford Howard, Commissioner of Woods and Forests, who appears to have the working of the forest at his finger-ends.

The chief feature of arboricultural interest during this day's tour was the fine Oak in the Lining Wood, which is being felled, with a view to natural regeneration, as laid down in the working plan of Mr. Hill. On Thursday, the 4th inst., an early start was made for Newland, the great Pollard Oak adjoining the village being inspected on the way. This tree resembles a gigantic butcher's block, surrounded by a low crown of foliage. It has an approximate circumference of 56 feet, and is quite hollow, its age being a matter of speculation only. A move was next made to the "Buckstone," a huge mass of conglomerate, which was originally so finely balanced as to rock when pushed, but at last was pushed once too often, and was dislodged from its perch, although it has since been replaced. The view from this stone of the surrounding forest, the Welsh hills, and the winding Wye, is magnificent. High Meadow Woods were next visited, in which some entomologists of the company made an interesting find in the shape of *Postrichus* hidens on a recently transplanted Cedar. The High Meadow estate being a freehold of the Crown, the woods are more heavily stocked with timber and coppice than the forest proper, and ought to yield a good return during the next half-century. The far-famed Symons Yat was reached shortly before noon. From this point the excursionists took boat down the Wye to Monmouth. The route next taken followed the valley of the Wye in the direction of Tintern Abbey, passing through the well-wooded property of the Duke of Beaufort. This portion of the route was equal to any in point of picturesqueness, the steep wooded slopes, in all their summer beauty, forming a scene which could scarcely be surpassed. After a short halt at the Abbey the return journey was made *via* St. Briavels and Parkend.

The following day some of the fine timber in the older parts of the forest was inspected. In the Church Hill enclosure, in the neighbourhood of Parkend, some very fine Oaks still remain, one in particular, above the village school, being much admired. The Forest Museum was visited, and the most highly prized specimen of the collection taken out for the Society's inspection. This proved to be a small Oak-stem, concerning which a curious tradition still lingers amongst the Crown woodmen to the effect that the tree was once stripped entirely of its bark by lightning, and then, in some way not explained, covered uniformly with new wood. The general opinion of the arboriculturist was, however, that it was merely a somewhat unusual instance of ring or cup-shake—an opinion which appeared to be rather

unwelcome to the officials present. The Danby Beeches proved to be some of the finest trees in the forest, the largest measuring some 18 feet in circumference. The return to the Speech House was made *via* Littledean, the best-preserved portion of the old Roman road to Soudley being in pected *en route*, thus bringing to an end what was generally admitted to have been a most enjoyable outing.

At the annual dinner of the Society on Wednesday evening, the principal speakers were Mr. Munro Fergusson, of Novar, M.P.; Mr. Stafford Howard, one of H.M.'s Commissioners of Woods and Forests; Colonel Bailey, R.E., Edinburgh; Professor Somerville, Mr. J. Watt, of Carlisle, and others. The general opinions expressed were in favour of the State assisting the cause of British forestry by the establishment of model forests and the improvement of the Crown woodlands.

On Friday evening the Society was honoured by the presence of Sir James Campbell, late deputy-surveyor of the forest, who referred in the course of an interesting speech to the experiments carried on by himself and his predecessor regarding the transplantation of large Oak and other trees, concerning which a lengthy controversy had been carried on many years ago in the *Gardeners' Chronicle*. The northern section of the Society left by special train for Edinburgh on Saturday morning, the best thanks of the excursionists being due to Mr. Robert Galloway, the Secretary, by whom the arrangements were carried out. A. C. Forbes.

SCOTTISH HORTICULTURAL.

AUGUST 2.—The usual monthly meeting was held on the above date. As the Arboricultural Society, whose members are considerably mixed with this, held their annual meeting in the same rooms, 5, St. Andrew Square, Edinburgh, at 10 A.M., on the same day, and some eighty members started for the Forest of Dean about 12 noon, some thought the evening meeting would be there. But there was a large attendance under the genial and able Presidency of Mr. M. Todd at 7.30.

The paper for the evening was communicated by Mr. W. Boyd, late of the Glen, and well read by the Assistant Secretary. The subject was the general cultivation of Orchids for cut flowers, dealing principally with such Orchids as are of a decorative character, and that bloom in autumn, winter and early spring. The paper was of a practical character, showing Mr. Boyd to have a thorough practical grasp of the subject, and revealing a minute knowledge of the cultural needs of the various genera and species. A very interesting discussion ensued at the conclusion of the reading of the paper, and very general approval expressed, as well as pleasure, that such an able communication should have been given to the Association by so young a man, and the hope was confidently expressed that Mr. Boyd, who has recently gone to his maiden situation as a head gardener, might soon take a place in the first rank of his profession.

Among several interesting exhibits was a fine dish of Richard Gilbert Strawberry, a promising seedling of Mr. W. CARMICHAEL'S, which excited interest. Certificates of Merit were awarded to Messrs. DICKSON & Co. for a new yellow Viola Walter Welch, and to Mr. JAMES GREENE & SONS, for Britannia Carnation, a very handsome pink-coloured border variety.

An enthusiastic vote of thanks was awarded to the President, Mr. Todd, for the successful manner in which he had planned and carried out the recent Bijou Rose show and Strawberry festival, which it is hoped may speedily grow into rivaling in brilliancy, size, and success, the great Chrysanthemum show of the Association which is second to none in Britain. Fifteen new members were proposed. D. T. F.

WELSHPOOL HORTICULTURAL.

AUGUST 4.—The above enterprising and rapidly growing society held its sixth annual show on the above date, in the park at Powis Castle, in splendid weather. Probably no position better adapted for holding a show could be found in the Kingdom than this beautifully undulating deer park.

The show was arranged in one enormous tent, or rather in a series of tents arranged *en bloc*, something of a double cruciform shape, which gave the tent manager, Mr. J. Lambert, the opportunity of displaying one of the most artistic effects hitherto seen, especially when viewed as a whole from any of the various points of vantage, evidently a step in the right direction, and one worthy of imitation by older societies. The method of arranging the exhibits involved much travelling backward and forward on the part of the judges—the only drawback that it had.

The first thing to arrest the eye was the central group, which included two rustic arches, spanning the gangways, and connecting two smaller groups around two of the tent-poles, which were draped right up to the canvas with rustic pots filled with trailing plants. In the centre of the large group were graceful plants of the now seldom seen *Humea elegans*, Kentias, and other light-foliated Palms; some grandly coloured plants of *Codiaeums*, several good plants of *Acalypha Sanderiana* mounded up on mossy banks, the undulations furnished with suitable plants of dwarfier growth, such as Begonias, Cannas, Fuschias, Ferns, Nertera depressa, &c., the whole reflecting the skilled good taste of Mr. Lambert, Lord Powis's gardener. Of course, this group was not for competition.

This group was rather damaging to the competitive groups but it afforded an example which will doubtless have its effect another year. For group occupying 200 square feet, Miss WRIGHT, Halston (gr., Mr. Roberts), was 1st, with a very pretty arrangement; Messrs. JONES & SON, Shrewsbury, were 2nd.

Cut Roses were a grand feature. Mr. MURRELL, of Shrewsbury, who staged grand boxes of Marchioness of Dufferin, Alfred Colomb, A. K. Williams, Duke of Edinburgh, and many good Teas, was awarded a Silver Medal.

Sweet Peas were excellent, Mr. ECKFORD receiving a Silver Medal.

Collection of fruit, eight kinds, Mr. H. FRANCE, Haverhurst, Wellington (gr., Mr. Bremel), was placed 1st, with Bowwood, Muscat, and Gros Maroc Grapes, Peaches, Nectarines, grand Cherries, Melons, &c.; Misses HOWELL, 2nd. A competition for Melons, Blenheim Orange leading. Peaches badly staged. Bouquets and buttonholes were very good. Bunches of annuals and wild flowers were well represented. Trade groups were well staged by Messrs. Cutbush, Dicksons, Clibran, Pattison, Murrell, Evans, and others, giving much zest to the whole. W. C.

ROYAL BOTANIC.

AUGUST 10.—The annual meeting of the Royal Botanic Society was held on Wednesday afternoon at the society's gardens in Regent's Park, Mr. C. Brinsley Marlay presiding. The Duke of Teck was re-elected president of the society.

The annual report, the adoption of which was moved by the chairman and seconded by Mr. Pembroke Stephens, stated that the year had been a successful one, the subscriptions having been greater than in any other year since 1892. The number of Fellows joining the society was 167, or 83 above the average for the last ten years, and 36 in excess of the previous year, the number now enrolled being 2,050. During the past year free tickets had been granted to 830 students, being an increase of 50 on the previous year, and about 64,000 cut specimens had been distributed for various educational purposes, showing that the medical and economic garden continued to be used and appreciated. The school of practical gardening had now been in operation nearly a year and had proved successful; several students were under instruction, and the Technical Education Board of the London County Council intended sending more. The council of the society had built during the year a substantial addition, consisting of a large dining-room, drawing room, reading-room, and library for the use of the Fellows and their guests, and a *café* for ordinary visitors, which it was hoped would be much appreciated. The report was adopted. Mr. Rubinstein, who proposed various salutary reforms, was informed that they should be duly considered by the council.

BRITISH PTERIDOLOGICAL.

THE seventh annual meeting of this Society was held recently in the Institute, Bowness-on-Windermere.

The President (Dr. STANSFIELD), in opening the proceedings, referred to the loss the Society had sustained during the year by the death of three of its members, namely, Messrs. Pease (Darlington), Tyldsley (Worsley), and Eadon (Sheffield).

He also referred to the improvement of Bolton's *Athyrium clarissima* in the hands of Mr. C. T. Drury, by the elimination of the tendency to produce coarse and imperfect fronds, and also gave a short account of his own experiments in the induction of apospory in a barren Fern, and in the attempt to perpetuate, by aposporous reproduction, Moly's variegated form of *Polystichum angulare pulcherrimum*. The Secretary's and Treasurer's reports were read, the former showing that the numbers of the Society had been maintained, and the latter showing that the funds were in a satisfactory and healthy condition.

At the election of officers, the outgoing President strongly urged that a change should be made in the holder of this office, and consequently Mr. C. T. Drury, F.L.S., was elected as the new President. Some changes were also made in the constitution of the committee. A paper was read by Mr. Atkinson, of Batley, "On Fern-growing in the Manufacturing Towns of Yorkshire and Lancashire." He recommended low houses, with cool earthen floors, and a north-western aspect, the latter being advisable in order to give a little sunshine at the close of the day. He advised a single row of hot-water pipes for the purpose of keeping out severe frost, but for no other purpose. A valuable paper was read by Mr. W. H. Phillips, of Belfast, on "Polystichum angulare proliferum, Past, Present, and Future." Mr. Phillips dealt with the history of the section, commencing from the finding of the first "proliferum" by Choulet, probably somewhere in the thirties, going on to the addition of other forms by Wollaston and others, and the gradual evolution of "proliferum" into *acutilobum*, *conspicuilobum*, *multilobum*, *divisilobum*, and finally *plumosum-divisilobum*—the details of the origin of the last most beautiful subsection, in the hands of the late Col. Jones and Mr. E. F. Fox, from spores given to the former by Mr. James Moly, and taken from his *P. decompositum splendens*, being carefully and accurately given. Mr. Phillips illustrated his paper by about a hundred well-grown fronds from his own collection of beautiful varieties, many of them having been found wild by himself, and all accurately labelled.

A paper by Mr. C. T. Drury on "Ferns as Pot Plants" was read, in the absence of the writer, by Dr. Stansfield.

Mr. Drury insisted upon the importance of Ferns being grown so as to display their full beauty as far as possible, and contrasted the appearance of Ferns to which justice had been done in this way with the miserable, half-starved, and over-crowded specimens as often seen. In order to give Ferns the best chance of displaying their charms to the fullest advantage, Mr. Drury strongly recommended that they should be kept as far as possible to single crowns, especially in the case of large and symmetrical growers, the impossibility of this in the case of caespitose Ferns, such as polypodies, &c., being fully kept in view.

An exceedingly distinct and beautiful new form of *Athyrium* was exhibited by Mr. J. EDWARDS, of Blackley, and duly named and registered as *Athyrium ramulosum* near. A number of well-grown and beautiful cut fronds were exhibited by Mr. TROUGHTON (Preston), Mr. SMITHIES (Manchester), and Mr. LOVELADY (Haslingden). A motion made by Mr. J. GOTT, of Kendal, that new Ferns, named and registered by the society, should in future be figured, and prints issued to the members, gave rise to considerable discussion. The idea was generally approved in principle, and it was ultimately resolved that the committee be instructed to make inquiries as to the best methods of illustration, and to submit specimens of various processes to the next meeting.

THE MIDLAND CARNATION AND PICOTEE.

AUGUST 5, 6.—It was generally acknowledged that the exhibition of Carnations and Picotees at the Botanical Gardens, Edgbaston, Birmingham, on the above date, was the finest, taken all round, which has been held at that town. There was not only a large number of blooms staged, but the quality was good in all. And yet there was scarcely a cultivator exhibiting who resided north of Wolverhampton. The northern growers say their blooms are very late, and it is doubtful if many of them will be open fully by the 13th, the date of the northern exhibition.

Mr. MARTIN R. SMITH, who was present, and Mr. J. DOUGLAS brought very fine blooms from the south, and carried off some of the leading honours of the day. As at the Crystal Palace, the smaller classes were largely filled, especially from the Birmingham district, where there are now a large number of Carnation growers.

In the show-house of the Edgbaston Botanical Gardens the flowers are seen to the better advantage than at the Crystal Palace, where the size of the building dwarfs them so inordinately, and the leafy backgrounds at the former place throws up the tints of the flowers. The show capacities of the building were tested to the utmost on this occasion, in view of several excellent honorary exhibits.

The bizarre and flaked Carnations were much superior to those shown at the Crystal Palace, and the selfs, yellow-grounds, and fancies were superb blooms. The flowers competing in the single classes were very numerous, forming of themselves an exhibition, and much superior as a whole to what is generally seen competing in this group of classes.

Self Carnations.—By way of affording some variety, the brilliant selfs had the place of honour in the schedule. There were ten stands of twelve blooms, Mr. C. BLICK, gr. to Mr. M. R. SMITH, The Warren, Hayes, Kent, took the 1st prize with blooms of great beauty and refinement. Of yellow selfs he had Cecilia and Gad-about, Midas, orange-Benbow, salmon; The Naiad, Helmsman, Ensign, and Purity, white; Joan of Arc and Conqueror, rose; Etna, scarlet; and Comet, crimson. Mr. R. SYDENHAM, Birmingham, was a close 2nd, having Germania and Regina, yellow; Little John, scarlet; Uncle Tom, very dark; Mrs. E. Hambro, white; Sea Gull, blush; Mrs. Colby Sharpin, apricot, as his leading flowers.

Some idea of the keen competition in the class for six selfs can be gained when it is said there were seventeen entries, Mr. A. W. JONES, Handsworth, Birmingham, taking the 1st prize with superb examples of Exile, rose; Mrs. Eric Hambro, white; Sea Gull, blush; Miss A. Campbell, yellow; Mrs. C. Sharpin, apricot; and Mancunian, dark maroon, very smooth and fine. Mr. R. C. CARTWRIGHT, Selly Oak, Birmingham, a very successful representative of the younger generation of Carnation specialists, was 2nd, with Mrs. Eric Hambro; Her Grace, blush; Exile, Regina, Sea Swallow, flesh colour; and Ruby, clear ruby.

Yellow Ground Picotees.—In this case yellow grounds are indispensable, but there must be one colour only on the petals, though it may be in fine lines or flakes as well as on the edge. One could, however, wish to see less laxity than was shown in some of the blooms staged. Seven stands put in an appearance in the class for twelve blooms, Mr. BLICK again securing the 1st prize, with a splendid lot of flowers, which comprised Gad-about, in this case having a distinct Picotee edge, Hesperus, Lady Bristol, Badminton, Professor, Empress Eugenie, Aglaia, Hygeia, Mrs. Jordan, Busybody, Gazelle, and Voltaire; Mr. JAS. DOUGLAS was 2nd, he having in very fine character, Heather Bell, Dervish, Voltaire, Mohican, Wanderer, His Excellency, and Mr. Nigel.

There were sixteen competitors in the six bloom class, Mr. R. C. CARTWRIGHT being 1st with the following, in grand character, Golden Eagle, Mr. Nigel, Countess of Jersey, Eldorado, Voltaire, and May Queen; and Mr. A. R. BROWN, Handsworth, Birmingham, was 2nd, having admirable blooms of The Gift, May Queen, Voltaire, Golden Eagle, Mr. Nigel, and Eldorado. Then there was a class for six Fancy Carnations, from which yellow-ground Picotees are excluded,

and here Mr. C. BLICK came again to the fore, with excellent examples of Morcar, Queen Bess, Alexandra, Goldilocks, Perseus, and Hidalgo, a really splendid lot; and Mr. R. SYDENHAM came 2nd with Monarch, George Cruickshank, Phoebe, Little Sam, The Czar, and Perseus.

White-ground Picotees.—There were six entries of twelve varieties, Mr. R. SYDENHAM having first-rate blooms of high quality, including the varieties H. Red E. Ganymede, H. P. E. Mrs. Openshaw, Muriel, and Miriam; L. P. E. Ann Lord and Jessie; H. R. E. Lady Louisa and Little Phil; L. R. E. Fortrose. H. Scarlet E. Mrs. Sharp; L. Scarlet E. Favourite and Dolly Dimple; and taking the 1st prize. Mr. A. R. BROWN was 2nd, he having as his leading blooms, H. Red E. Brunette, H. R. E. Mrs. A. B. Brown, a very promising new variety; H. Red E. Ganymede, L. P. E. Harry Kenyon, &c.

Nineteen entries were made in the class for six blooms. Mr. A. W. JONES, who had a great local reputation as a successful cultivator, was 1st, with excellent blooms of L. Red E. Thomas William, H. P. E. Amy Robsart and Mrs. Openshaw, H. Ro. E. Mrs. Payne, Mrs. A. R. Brown, and Little Phil; and Mr. R. C. CARTWRIGHT was 2nd. He had Ganymede, Amy Robsart, Little Phil, Mrs. Sharp, also L. P. E. Pride of Leyton, and Mrs. Payne.

White Ground Carnations.—Eight competitors staged in the class for twelve flaked and bizarre Carnations, Mr. R. SYDENHAM adding to his honours by taking the 1st prize with refined blooms of S. Bs. R. Monk and Edward Adams; C. Bs. Mrs. J. Burgess, J. S. Hedderly, and Master Fred; P. P. B. Sarah Payne; P. F. Geo. Melville and Gordon Lewis; S. F. John Wormald and Sportsman; R. F. Mrs. Rowan and Thalia; and Messrs. THOMSON & Co. were 2nd, their best blooms being S. F. Sportsman; S. B. Robert Houlgrave; R. F. Mrs. Moy, Thalia, and Cristi-galli; C. B. J. D. Hextall and Master Fred, and P. F. Gornon Lewis.

With six white-ground Carnations, Mr. C. F. THURSTAN was 1st, having S. B. Edward Adams, C. B. J. S. Hedderly, P. P. B. Arline, P. F. Geo. Melville, S. F. Sportsman, and R. F. Mrs. Moy.

There was a class for six Carnations of any type, exhibited by maiden growers who had not taken a 1st or 2nd prize at any exhibition of the Society. Mr. T. F. DRANFIELD was 1st, staging all of the fancy type, he having Monarch, May Queen, Voltaire, and Eldorado, with two seedlings; Mr. W. H. TWIST, Birmingham, was 2nd, he having all white-ground Picotees.

Undressed Blooms in Vases.—Several prizes in various classes were offered for these, the flowers to be as little dressed as possible, whatever that quantity of artificial manipulation might be. Mr. R. SYDENHAM had the best twelve selfs, set up with Carnation foliage; and Mr. M. R. SMITH was 2nd. There were many entries for six selfs, Mrs. W. BELLAMY was 1st. Mr. BLICK staged the best twelve fancies or yellow grounds in the same way; Mr. J. DOUGLAS being 2nd. Out of seventeen entries Mr. R. CARTWRIGHT was 1st, with six yellow grounds or fancies. Mr. R. SYDENHAM had the best twelve white ground Picotees; Mr. A. R. BROWN was 2nd. With six white grounds, Mr. THURSTAN was 1st.

The class for six blooms of any type brought a keen competition also, and here again Mr. CARTWRIGHT came 1st, Messrs. THOMSON & Co. being 2nd. As a general rule the flowers in the foregoing classes were unnamed.

Carnations.—In the classes for single blooms the following were the best, S. Bs.: 1st, Admiral Curzon; Robert Houlgrave being 2nd, 3rd, 4th, and 5th. C. Bs.: 1st, 3rd, and 5th, Master Fred; 2nd and 4th, J. S. Hedderly. P. P. Bs.: 1st and 2nd, William Skirving; 3rd, Sarah Payne; 4th, Geo. Rudd; 5th, Cooper. S. F.: Sportsman was in such good character that it took all five prizes. R. F.: 1st and 4th, Thalia; 2nd and 3rd, Merton; 5th, Mrs. Moy. P. F.: 1st, 2nd, 4th, and 5th, Gordon Lewis; 3rd, Geo. Melville.

PICOTEES.—H. Red E.: 1st, 2nd, 3rd, and 5th, Ganymede; 4th, Brunette. L. Red E.: 1st, 2nd, and 5th, Thomas William; 3rd and 4th, Mrs. Gorton. H. P. E.: 1st and 4th, Muriel; 2nd, 3rd, and 5th, Mrs. Openshaw. L. P. E.: 1st, Harry Kenyon; 2nd and 3rd, Ann Lord; 4th and 5th, Pride of Leyton. H. Rose E.: 1st, 2nd, and 5th, Clio; 3rd and 4th, Mrs. Sharp. H. Scarlet E.: 1st, and 2nd, Mrs. Payne; 3rd, Little Phil; 4th and 5th, Lady Louisa. L. Ro. or Scarlet E.: 1st, 3rd, and 5th, Favourite; 2nd, Fortrose; and 4th, Mrs. Payne.

Selfs and Fancies.—White or flesh: Mrs. Eric Hambro, white, took all the prizes. Yellow, buff, or terra-cotta: 1st, Benbow, apricot; 2nd, 3rd, and 5th, Regina, yellow; 4th, Cecilia. Rose, pink, or salmon: 1st and 2nd, Exile, rose; 3rd, Royalty, rose; 4th, Ada, salmon; 5th, Felicity, pink. Scarlet: 1st, Etna; 2nd, Mrs. Parkinson; 3rd and 5th, Seedlings; 4th, Grandeur. Dark: 1st, Uncle Tom; 2nd, Sir Bevy; 3rd and 4th, Mancunian; 5th, Negress. Wire-edge: Y. G. Picotee, 1st, Mrs. Douglas; 2nd, Seraph; 3rd and 4th, Mohican; 5th, Ladas. Heavy-edge: Y. C. Picotee, 1st and 2nd, Voltaire; 3rd and 5th, Wanderer; 4th, Eldorado. Fancy Carnations: 1st, Lady Ardilaun; 2nd, Cardinal Wolsey; 3rd and 4th, Monarch; 5th, Ossian.

Premier Flowers.—Bizarre: Master Fred, C.B., a very finely-marked bloom, from Messrs. THOMSON & Co. Flake: Gordon Lewis; P. F., Mr. R. Sydenham; R. E. Picotee, Mrs. Payne; Ro. E., Thomas William, L. Red, both shown by Mr. A. W. JONES; Y. G. Picotee: Hygeia, Mr. Martin R. Smith; Self: Benbow; Apricot: Mr. M. R. Smith; Fancy Carnation: Queen Bess, Mr. M. R. Smith. No Certificates of Merit were awarded, though some seedlings were staged.

Border Carnations cut with long stems as grown did not bring a great deal of competition. Mr. BLICK, who was the only exhibitor, had the best twelve bunches of border

varieties, and the best twelve yellow grounds or fancies, with remarkably good blooms. Mr. T. W. WEGUELIN, Teignmouth, carried off the 1st prizes for six bunches of each; Mr. A. J. ROWBERRY, South Woodford, was 2nd.

Plants in Pots.—The best six pots of Carnations came from Messrs. THOMSON & Co., who had yellow grounds, Mr. R. SYDENHAM winning 2nd, mainly with selfs; but the plants were well grown and bloomed. Mr. Ernest Benary's (Erfurt) special prizes for varieties in pots of his own raising, brought no competition. Floral decorations consisted of bouquets, sprays, and tables. Capt. SHAWLES had the best bouquet, consisting wholly of a pale salmon variety, with appropriate foliage. Mr. BLICK came 2nd, with an imposing posy of mixed varieties. Sprays and button-holes were both numerous and good. The best table was arranged by Miss MONK, delicate white and yellow self Carnations being employed with good effect; Mrs. LOVATT was 2nd, with a rather florid arrangement.

The Sydenham Amateur Challenge Cup was taken by Mr. M. R. SMITH, the Midland Counties Challenge Cup by Messrs. THOMSON & Co., and the Birmingham Botanical Society's Silver and Bronze Medals went to Messrs. SYDENHAM and THOMSON & Co.

Some special prizes were offered for other exhibits. Mr. Henry Eckford, Wem, invited twelve bunches of Sweet Peas, and an excellent competition ensued; and the same occurred in the case of Mr. R. Sydenham's special prizes for nine bunches. These two classes brought a charming display. Epergnes of Sweet Peas were also invited, and several very pretty ones were set up. There was also a class for twelve bunches of herbaceous or perennial blooms, but only two collections of moderate merit were staged.

Miscellaneous.—Mr. B. R. DAVIS, Yeovil, set up a splendid bank of double and single Begonias, and was awarded a Silver-gilt Medal. Silver Medals were awarded to Mr. H. ECKFORD for one of his unique collections of bunches of Sweet Peas; to Mr. W. F. GUNN for a very fine collection of hardy cut flowers; and to Messrs. HEWITT & Co., Solihull, for the same and attractive floral decorations. Mr. J. H. WHITE, Worcester, had hardy flowers; Mr. J. DOUGLAS, cut Carnations; and Mr. R. SYDENHAM floral decorations.

In the evening Mr. R. Sydenham entertained the judges, exhibitors, and others at supper on the show ground, when several practical suggestions were thrown out with a view to the improvement of the schedule of prizes.

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	Above (+) or below (−) the Mean for the week ending August 6.	ACCUMULATED.				More (+) or less (−) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 2, 1898.	Below 42°, difference from Mean since January 2, 1898.				
0	1 −	88	0	+ 126	− 228	9 +	154	33.0	28
1	0 aver	103	0	+ 86	− 222	2 −	116	14.0	26
2	1 +	125	0	+ 115	− 216	5 +	166	12.0	33
3	0 aver	133	0	+ 36	− 207	2 −	97	11.6	50
4	1 +	131	0	+ 36	− 215	8 +	96	11.3	38
5	0 aver	134	0	+ 85	− 243	4 −	90	10.5	54
6	0 aver	104	0	+ 121	− 217	8 +	132	22.1	18
7	0 aver	123	0	+ 122	− 244	12 +	112	19.0	23
8	0 aver	124	0	+ 131	− 156	3 +	102	16.6	37
9	1 +	112	0	+ 119	− 168	3 +	141	19.5	14
10	2 +	128	0	+ 209	− 134	4 +	108	18.8	19
*	1 +	141	0	+ 258	− 93	0 aver	117	13.2	42

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; *Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending August 6, is furnished from the Meteorological Office:—

"The weather was unsettled and rainy in the extreme north and north-west from the commencement of the period

and these conditions gradually extended southwards and eastwards, so that towards the end of the week they embraced the entire kingdom. Thunder and lightning were occasionally experienced, chiefly in the eastern and south-eastern parts of Great Britain.

"The temperature differed very little from the mean value over Great Britain, but was slightly above it in Ireland. The highest of the maxima were recorded during the earlier days of the week, and ranged from 80° in 'England, E.' and 79° in the 'Midland Counties' and 'England, S.' to 71° in 'Ireland, N.' and 68° in 'Scotland, W.' The lowest of the minima, which were registered on July 31 over England and Ireland, and towards the end of the period in Scotland, ranged from 34° in 'England, S.W.' and from 40° in 'Scotland, E.', 'England, E.', and the 'Midland Counties,' to 45° in 'Scotland, N.', 'Ireland, N.', and 'England, N.E.' and to 49° in the 'Channel Islands.'

"The rainfall was less than the mean in 'Scotland, E.' and 'England, E. and S.' and just equal to it in the 'Channel Islands;' elsewhere, however, there was an excess, that over Scotland and the greater part of England being very large. The fall exceeded an inch at several of the inland English stations on Wednesday, and at others on Saturday. On the latter day, at Stamford, about 1.25 inches is reported to have fallen between 4 and 7 P.M.

"The bright sunshine was less than the normal over all the western and most of the northern parts of the kingdom, but exceeded it over southern, central, and eastern England, and in the 'Channel Islands.' The percentage of the possible duration ranged from 62 in the 'Channel Islands,' 54 in 'England, S.', and 50 in 'England, E.' to 38 in the 'Midland Counties,' 19 in 'Ireland, S.', 18 in 'Scotland, W.', and 14 in 'Ireland, N.'"

MARKETS.

COVENT GARDEN, AUGUST 11.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, 12 blooms	3 0-4 0
Carnations, pr. doz.	1 0-3 0
blooms ...	2 0-4 0
Eucharis, per dozen	1 6-3 0
Gardenias, per doz.	0 8-1 0
blooms ...	2 0-4 0
Gladioli, white, doz.	1 0-1 6
sprays ...	4 0-8 0
Lilium Harriet, per	2 0-4 0
dozen blooms ...	1 0-1 6
Lily of the Valley,	4 0-8 0
dozen sprays ...	2 0-4 0
Maidenhair Fern,	
per 12 bunches ...	2 0-4 0
Mignonette, per 12	
bunches ...	2 0-4 0
ORCHID-BLOOM in variety.	
Orchids:—	
Cattleya, 12 bms.	5 0-8 0
Odontoglossum	
crispum, 12 bms.	2 0-4 0
Pelargoniums, scar-	
let, per 12 bun.	3 0-5 0
— per 12 sprays ...	0 4-0 6
Roses, Tea, per doz.	0 6-1 0
— yellow (Pearls),	
per dozen ...	1 0-2 0
— pink, per dozen	1 6-2 0
— Safrano, p. doz.	1 0-2 0
— red, per dozen	0 6-1 0
Stephanotis, doz.	
sprays ...	1 0-1 6
Tuberose, 12 blms.	1 0-1 6

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz.	4 0-12 0
Aspidistras, p. doz.	12 0-30 0
specimen, each	5 0-15 0
Calceolaria, per doz.	5 0-7 0
Coleus, per doz.	3 0-4 0
Crassula, per doz.	12 0-24 0
Dracenas, each ...	1 0-7 6
various, p. doz.	12 0-24 0
Evergreen shrubs,	
in variety, p. doz.	6 0-24 0
Ferns, small, per	
dozen ...	1 0-2 0
various, p. doz.	5 0-12 0
Ficus elastica, each	1 0-7 6
Fuchsias, per doz.	5 0-8 0
Foliage plants, per	
dozen ...	12 0-36 0
Heliotropes, p. doz.	4 0-6 0
Hydrangeas, various,	
per doz. ...	10 0-18 0
Liliums, various,	
per dozen ...	12 0-30 0
Marguerites, p. doz.	6 0-12 0
Mignonette, p. doz.	4 0-6 0
Palms, various, ea.	2 0-10 0
specimens, ea.	10 6-84 0
Pelargoniums, doz.	9 0-12 0
Rhodanthes, p. doz.	3 0-6 0
Scarlets, per doz.	3 0-6 0
Spiraeas, per doz.	6 0-9 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Juneating,	
sieve ...	3 0 —
— Keswicks, &c.,	
sieve ...	2 0 —
— Suffields, bush.	6 0 —
— Quarrendens,	
sieve ...	5 0 —
Bananas, bunch ...	8 0-10 0
Cherries, English,	
Napoleons, sieve	12 0-14 0
— Caroons and	
black ...	4 0-6 0
Currants, black,	
per sieve ...	5 0-6 0
— red ...	2 6-5 0
Figs, per dozen ...	1 3-2 6
Grapes, English,	
Hamburgh, lb.	1 6-2 0
— second quality	0 8-1 0
— Belgian, per lb.	0 6 —
— Channel Isles,	
per lb. ...	0 9 —
— Muscats, per lb.	1 3-2 6
Greengages, foreign,	
sieve ...	5 0-8 0
— boxes, 20 lb.,	
nett ...	2 0-3 6
Gooseberries, per	
sieve ...	1 3-1 6
Melons, each ...	1 0-1 6
Nectarines, doz. ...	8 0-12 0
— second quality	3 0-5 0
Peaches, per doz.	
(according to	
size) ...	8 0-12 0
— Second quality	3 0-5 0
Pines, each, from ...	2 3-5 0
— English Queens	6 0 —
Raspberries, dozen	
punnets ...	7 0 —
— tubs, cwt. ...	40 0 —
Strawberries, Kent,	
punnets, per doz.	4 0-8 0
Walnuts, green, per	
bushel ...	4 0 —

POTATOS.

70s. to 90s. per ton. John Bath, 32 and 31, Wellington Street, Covent Garden.

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe,	
per doz. ...	0 9-1 6
Beans, English	
(Dwarf), sieve ...	2 0 —
— bushel ...	4 0 —
— Scarlet, in bus.	3 6-4 0
— French, flats ...	3 6 —
— Broad, bushel ...	1 0-1 6
— in bags ...	2 6 —
Beetroots, new, per	
dozen bunches	3 0-4 0
— p. tally of 60 ...	4 0-5 0
Cabbage, open, doz.	1 0 —
— open, p. tally ...	3 0-5 0
Cauliflowers, Eng-	
lish, per dozen	1 0-1 6
Cress, doz. punnets	1 6 —
Carrots, New, bun-	
ches, per dozen	0 9-1 3
— washed, in bags	4 0 —
Celery, new, bundle	1 0 1 6
Cucumbers, p. doz.	2 0-3 0
Endive, English,	
per score ...	1 0 —
Garlic, new, per lb.	0 3 —
Horseradish, foreign	
per bundle ...	2 0-2 6
— New English ...	2 6-3 0
Leeks, new, dozen	
bunches ...	1 6 —
Lettuce, Cabbage,	
home - grown,	
per doz. ...	1 0-1 6
— Paris Cos, home-	
grown, per score	2 0-2 6
Marrows, Vege-	
table, per dozen	0 9-1 6
Marrows, per pot ..	3 0 —
Mint, per dozen	2 0-3 0
Mushrooms, per lb.	0 6-1 0
Onions, Dutch, bag	3 6-4 6
— green, per doz.	1 6-3 0
— bunches ...	1 6-3 0
— Valencia and	
Oporto, cases ...	5 0-6 0
Parsley, per dozen	1 0-2 0
— sieve ...	1 0 —
Peas, bags ...	4 0-5 0
— bushel ...	3 0-4 0
Potatoes, Bedford	60 0-90 0
— Puritans and	
Snowdrops, best	2 6-3 0
— Kent, per bushel	2 6-3 0
— Kent Kidneys,	
per bushel ...	4 0 —
Radishes, Round,	
breakfast, per	
dozen bunches	1 3 —
(home grown) ...	1 3 —
Salad, small, pun-	
nets, per dozen	1 3 —
Shallots, good, per	
cwt. ...	12 0-14 0
Spinach, ½-bushel ...	1 0 —
Tomatoes, English,	
per lb. ...	0 3½-0 4½
— Channel Isles,	
per lb. ...	0 2½-0 3
Turnips, new Eng.,	
per dozen ...	3 0-5 0
— in bags, good ...	3 0 —
Watercress, p. doz.	
bunches ...	0 4-0 8

REMARKS.—Large supplies of foreign Greengages and Plums coming in good condition and of good size. The Orleans Plums are fine, whereas our home-grown that I have seen were small. There are also Apples in cases, Grapes in tubs, and Plums in various packages coming daily. Of cooking Apples the best, I think, are Suffields, as they are the largest. Strawberries are now practically over. If any reader wants Walnuts to pickle secure them immediately, if they are not already wooded. If they are not do not have them at any price, as they will be a failure. Gooseberries have been low in price all the season, and are finishing badly.

SEEDS.

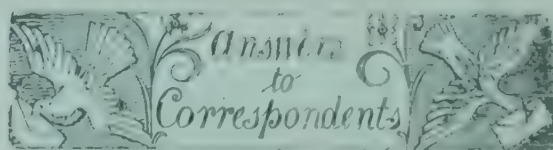
LONDON: August 10.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report a continuance of quiet and ill-attended markets, with but few transactions passing. The rise in new French and English Trifolium is maintained, and the demand is only moderate. There is a steady sowing inquiry for Rape and Mustard at recent figures. Samples of new Essex Rye are now showing. Canary seed tends upwards. Linseed quiet. Blue Peas and Haricot Beans neglected. Other articles at this dull period offer no subject for comment.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending August 6, and for the corresponding period of 1897, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1897.	1898.	Difference.
s. d.	s. d.	s. d.	s. d.
Wheat ...	29 5	35 7	+ 6 2
Barley ...	17 9	26 11	+ 9 2
Oats ...	18 11	20 7	+ 1 8

(Remainder of Markets carried forward to p. ix.)



ALGÆ: P. R. Dellesteria sanguinea "Dulse."

BEEBLE FOUND ON ROSE BUSHES: Isaac Milsom. The beetle is one of the few Rose-beetles found in this country, and is called Cetonina aurata. The perfect beetles are often found upon Roses, and they sometimes alight on Strawberry-plants, devouring the pistils and stamens of the flowers. The grubs are not satisfied with a light diet of Rose-petals and leaves, &c., but subsist mainly on decaying-wood found at the root of trees, and are frequently found in ants' nests, where they remain undisturbed by the ants.

CLOVER PARASITE: P. L. H. Orobanche minor—Broomrape. Your men must have been very unobservant, for it is very common, but not generally so abundant as you say. It is parasitic on the

roots of Clover, and was probably introduced with the Clover seed.

DONATION.—The Editor begs to thank Mr. Parker, Pitchcombe View, Stroud, Gloucestershire, for his donation to the Royal Gardeners' Orphan Fund of the sum of 10s. 6d., which has been forwarded to the Treasurer, Mr. A. F. Barron, 13, Sutton Court Road, Chiswick.

GOAT MOTHS: W. H. B. If the moths are numerous and the grubs are doing much injury to the stems of trees by boring into them, the former should be caught, as they rest quietly during the day on the bark of the trees, out of which they are hatched. A coating of clay and cow-dung, laid on the bark, has been found to deter the moth from laying her eggs on a tree. The grubs may be killed in the galleries they make by inserting a piece of stiff wire; and tobacco-water, petroleum, fumes of the flowers-of-sulphur, forced into their holes, will kill them. If a tree is much infested it should be cut down, and the grubs destroyed.

NAMES OF FRUITS: A. A., Glasgow. A, Industry (Whinham's); B, Legerdemain; C, do.; D, Broom-girl; E, Companion (Hopley's). If sending others, kindly send some foliage.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—A. C. 1, Veratrum nigrum; 2, Gnaphalium margaritaceum; 3, Clematis flammula; 4, Achillea Clavennæ; 5, Tecoma jasminoides. Thank you very much for sending good specimens, properly packed and labelled.—J. M. B. Spiraea Lindleyana.—E. S. R. 1, Fuchsia splendens; 2, Cestrum aurantiacum; 3, Berberis nepalensis; 4, Phalaris arundinacea variegata; 5, Euonymus japonicus aureo-variegatus; 6, Euonymus japonicus albo-variegatus.—P. L. H. Cattleya Eldorado.—G. B. 1, Hæmanthus natalensis; 2, Helianthus doronocoides, perhaps; 3, Agrostemma coronaria; 4, Enothera Youngi; 5, Sedum pruinosum; 6, Lysimachia nemorum; 7, Blechnum vulgare; 8, Adiantum Waltoni diffusum.—J. McM. The Rose is a variety of Rosa microphylla. No. 1, Spartium junceum, Spanish Broom; 2, Genista tinctoria.—J. P. Campanula rapunculoides, Enothera biennis. The rust on C. rotundifolia is Coleosporium campanulæ. We fear there is nothing to be done but burn the affected plants. We cannot tell you about the Iris at present; wait till the holiday season is over and send other specimens.—H. R. G. 1, Teucrium scorodonia; 2, Stachys sylvatica; 3, Geranium Robertianum; 4, Melilotus officinalis; 5, Scrophularia aquatica; 6, Lychnis dioica; 7, Linaria cymbalaria.—Anxious One. Spiraea Lindleyana.—Acelistansen (?) Edmonton. Hoya carnosa.

PALM: L. S. You can stave off the time when it will have got so large that you must dispose of it by making a brick enclosure, round or quadrangular, the bottom of which will be lower than the base of the roots by 2 to 3 feet, and then plant the Palm therein.

POTATOS: Austin & McAslan. The material and information sent are insufficient to enable us to form an opinion as to the cause of the malady.

WATER-WEED: H. Potamogeton natans. Can you run the water off, and dry up the bottom, removing all the plants as far as possible?

COMMUNICATIONS RECEIVED.—F. W. S.—V. Lemoine (many thanks) signature illegible, Java—E. C.—American Pomological Society.—C. Slade, Clumber, too late for use.—A. W.—G. W. C.—H. W. Admitt & W. W. Naughton.—G. W. King.—F. G. Skelton.—Jas. Acland & Co.—Laxton Brothers.—W. H. P.—A. D.—R. D.—H. M.—J. J. W.—T. P.—E. C.—E. S.—G. G.—H. W. W.—W. Swan.—D. R. W.—Laxton Bros.—W. Smith, Bishop's Stortford.—J. F. McL.

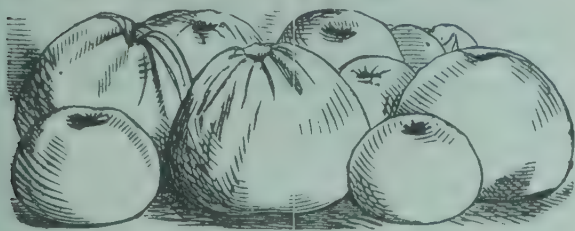
PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—W. Miller—W. E. G.—V. Lemoine.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is reserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 20, 1898.

THE PRINCIPLES AND PRACTICE OF PRUNING.

THERE are many ways in which the gardener may avail himself of Nature's workmanship, and one of these consists in the production of a great variety of luscious fruit from trees which, in the wild state, bear fruit of a single uniform type, sour, insipid, and unfit for the human palate.

From the Crab he has obtained the nutritive Apple; from the wild Pear all the juicy varieties of that fruit; from the wild Gooseberry, scarce larger than a bullet, the swollen, sweet-tasting berries of our kitchen-garden, an inch across; and so on with very numerous other kinds.

How has this feat, far-reaching indeed in its beneficent results, been brought about? By dint of careful and patient cultivation through centuries, if not millennia of years, of the rough-hewn products of Nature dispersed around us in the world.

Almost all horticulturists agree that pruning should play a part in the cultivation of our fruit-trees, for its usefulness has been established over and over again.

The practice of pruning is founded on the fundamental biological fact that in the growth and life-history of every plant there are two forces at work—the force which tends to the production of vegetative, and that which tends to the formation of reproductive organs.

In Nature an even balance between these two forces is almost always ultimately struck, the one ever subserving the other, neither being in any way exaggerated or hurried, the ultimate result being that condition which is, to all intents and purposes, most perfectly adapted to the plant's immediate environment, and hence to the needs of its adequate and full existence.

As attractive-looking, sweet-tasting fruit is always produced by a plant in order that animals of some kind or other may pluck it, devour it, and so help towards the dispersal of the seeds which it contains, this result being finally attained, the plant has realised the aim of its existence. The Crab-tree and the wild Gooseberry-bush have reached the point of sufficiency for the needs of their life in the production of the fruit which the wild birds probably fully enjoy.

But civilised man, appearing on the scene, will have something still better than this; and in order to attain his end, he, alongside of other and equally important modes of cultivation, such as planting in properly-treated soil, cross-breeding, assignment of a spacious position, and protection from insect-pests, sets to work to upset the equilibrium established by Nature between the two forces above-mentioned, thus creating a disturbing and restraining influence upon the free course of the tree's life. For he recognises the principle that, by restraining the force which tends to the forma-

tion of vegetative organs, he can increase that which tends to the formation of reproductive organs. This artificial interference on man's part with the ordinary life-conditions of the tree must lessen the vigour and shorten the life of the latter to a certain extent; but we shall see that the advantage accruing to man from his action far outweighs any loss of robustness or shorter duration of fruit-bearing activity which the tree may suffer therefrom. Hereafter, the cultivated Apple-tree of the orchard will lack the strong vigour of the wild Crab-tree of the forest; but the latter, if it could do so, would marvel at the wonderful change in the character of the fruit produced by its descendant. Man, by the swift process of artificial selection, has followed in the wake of the slower process of natural selection, and the result is unique.

We have now to consider some of the more detailed methods by which the force which tends to the formation of vegetative organs is diverted, and that which tends to the formation of reproductive organs, viz., the fruit allowed freer play.

It is but natural that the orchard fruit-tree, if left to itself, as regards the knife, will form vegetative growths, and fruit pretty much after the same fashion as the wild Crab-tree. There may be some difference in quality of the fruit, owing to the richer soil and more favourable situation and precedent ancestry, but this difference will be but slight and inappreciable. Something else will have to be done in order to induce the predominance of fruit-formation to that of vegetative growth. And this is pruning.

This important factor must come into play in the very first infancy of the tree, as it gradually develops and grows from the grafted or budded scion. The pruning at this stage of its life-history will depend on the mode of training to which the tree is hereafter to be subjected. If the future fruit-bearer is to be a wall or espalier-tree, the growth of the main stem or leader must be subordinated and more or less sacrificed to the growth and development of the lateral branches; for, if Nature were allowed free play, the main stem of the tree would soon overtop the wall and the lateral branches become subordinate and of comparatively insignificant length. But the object which the gardener has in view in the training of these trees is that the wall or espalier shall be well covered by the tree, and the space available thoroughly economised, so that the tree must henceforth, from its youngest state onwards, pursue a horizontal rather than a vertical direction of growth. It will thus be seen that the tree departs from its natural habit of growth, not only by this horizontal development of the lateral branches at the expense of the main stem or leader, but also in the fact that the lateral branches are allowed to develop in one plane only, viz., that of the long extension of the wall or espalier. Few forms could be more unnatural or more utterly unlike the habit of the tree in its native state; and the fact that the tree will submit to this and other almost equally artificial methods of training, and bear good fruit, argues that fruit trees have been under training and cultivation for untold generations, and have thus become gradually inured to such severe treatment.

The young grafted tree, at an early age, is topped, or shortened, for several inches, which interruption in the normal flow of the sap upwards causes the latter to accumulate in greater abundance at the place of insertion of the uppermost lateral eyes or buds, and from these to induce the precocious development of lateral branches, while a new leader is allowed to develop from the highest bud or not, as the case may be. Supposing the leader to grow upward rapidly again after this treatment, it must the following winter be again topped in order to start a second pair of laterals above the first formed, and so on year after year, the pruning always being performed in the winter-time, when the active life of the plant is

suspended, and when, therefore, there is less fear of interfering with its vitality and its proper course of growth.

The lateral branches are not to be shortened at all in the case of most hardy fruit trees with vigorous growth, but are to be allowed to grow right ahead as far as space will permit. If shortening took place, the sap, instead of being evenly and equally distributed throughout the whole length and thickness of the branch, would be thwarted in its natural course, and induced to accumulate to excess in the lateral buds or eyes, especially those near the end of the pruned branch, and these eyes being caused to shoot, the result would be, instead of the fruit-spurs which would naturally have appeared all along the untouched branch, a great production of tertiary woody shoots, and a consequent absence or great reduction of fruit-forming twigs. The topping of any leading shoot inevitably induces the formation of lateral members—a wise provision of Nature for the continuance of the temporarily thwarted vegetative growth of the shoot, but which is exceedingly detrimental to all immediate fruit-forming capacity, and thus to be avoided by the cultivator. Certain kinds of trees, however, such as the Peach, Nectarine, Apricot, which are less vigorous and active in their growth, owing perhaps to the fact that they hail from under more southern skies, are not nearly so liable to the formation of woody outgrowths when their lateral shoots are shortened; hence, where found advantageous, this practice may with these more frequently be indulged in.

If it is desired to form a "pyramid," the same process of topping of the young budded tree must be practised, and a number of branches induced to develop all round the stem, which must be kept at even distances apart, and proportionate in length, so that the lowest are always the longest and strongest, otherwise the pyramidal form will not be retained. To obtain this result, the lateral branches will require carefully watching and training, and frequent shortening to the proportionate distances, otherwise they will naturally tend to grow irregularly in length and in direction.

In the formation of standards by pruning, the main object is to obtain a well-formed symmetrical head or crown. After the young tree has reached a certain height, its natural growth is severely interrupted and suppressed, owing to the fact that henceforth a number of spirally-arranged lateral branches are caused to develop from the uppermost eyes, entirely at the expense, and to the ultimate complete extinction of, any further growth in length of the main mother-stem. The latter is first of all topped, in order to induce the out-growth of the lateral shoots, but not in the manner described for the "pyramid," close above an eye, but some little distance above, so as to leave a blind stump. By this means the topmost eye of the mother-stem will be caused to grow in an obliquely ascending direction upward, as an uppermost lateral shoot, instead of forming a vertical continuation of the main axis, as it would do if no stump were left. The second service performed by the stump is to draw for a time some of the sap away from the topmost eye, and so prevent it developing too vigorously and more strongly than the others. Eventually the stump must be removed. This same kind of topping must be adopted, with all the lateral and every succeeding shoot in the same way, until, after the tree has for a few years been put through its youthful training, it is eventually left entirely to itself.

These are the three principal types of the artificial form to which fruit-trees are trained in the garden. As we have seen, the desired form must be early induced in the young tree, when its tissues are as yet plastic and yielding, for it goes without saying that it is difficult to force an older tree, especially when it has begun to form fruit, into a habit of growth to which it is entirely unaccustomed.

One main object of the training of fruit-trees into various shapes is, of course, to please the eye; it is elegance or strangeness of form which we desire to see; but the chief object of the cultivation of fruit-trees is the production of fruit. We have no wish to see an abundance of fine fruit developed on an uncomely

tree; but neither do we wish to see a beautifully-formed tree with a paucity of fruit. The ideal towards which we have to strive is a mingling of the two characters: the abundant production of fine fruit and an elegance of form in the tree. And the elegance of form of the tree (at least, in its younger state), and the quality, if not the quantity of the fruit which it bears, must be superior to what we find in Nature. W. C. Worsdell, F.L.S.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

STANHOPEA MADOUXIANA, *Cogniaux ex F. Claes*, in litt. (1896).*

[See Fig. 34, p. 135.]

I RECEIVED from M. Florent Claes materials which enabled me to study this new species at the same time and in the same way as was the case with *S. Rodigasiana*. (See *Gardeners' Chronicle* for July 9, 1898, pp. 31 and 32.) The pseudo-bulbs are ovoid, covered with scales, which at the point are all fringed into narrow filaments; they are surmounted by a leaf which is erect, full, rather stout, oblong, sharply-pointed, with five distinct veins, of a deep green colour, attaining from 20 to 30 inches in length by from 5 to 9 inches across, furnished with a long and slender petiole. Peduncle pendent, long, rather robust, flexible, biflorous or sometimes uniflorous. Bracts rather large, swelled, oval, obtuse. Flowers deliciously fragrant, from 5 to 7 inches across, lasting about three days. Sepals triangular-oval, obtuse, convex, of a cream-white colour, evenly covered with large spots of carmine-rose much raised towards the peduncle after the second day from the opening of the bloom. Petals widely oblong, obtuse, convex, with very delicately waved edges, a little shorter than the sepals, of the same colour as they, and raised like them towards the peduncle. Lip fleshy, nearly as long as the sepals, of the same colour as the other parts of the flower, except the cavity of the hypochile, which is deeply tinged with violet-black; hypochile long, cymbiform, much incurved, and a little dilated in the upper part, without appendices; mesochile bearing two fleshy horns, pendent, ligulous, pointed, slightly arched; epichile the size of the horns, oval, pointed a little, convex. Column as long as the lip, rather incurved, nearly semi-cylindrical in the lower portion with two rather large wings in the upper part. This beautiful species, which seems somewhat to resemble *S. oculata*, Ldl., was obtained by M. Claes in the Province of Antioquia (Columbia). *A. Cogniaux*.

CULTIVATION OF CACTI AND OTHER SUCCULENTS.

ACCORDING to M. Delaet, the cultivation of Cacti is easy, and does not even necessitate heat, as all can be grown indoors, and in summer in the open ground.

The best compost for them consists of one-half of good substantial mould, a quarter of light peat, and one quarter portion of wood ashes; the whole to be mixed with the coarsest sand and broken lime (mortar-rubbish from old walls) very thoroughly. Cacti do well in this soil; Phyllocacti require rather more peat and less lime.

Rhipsalides are cultivated successfully in the same compost as many Cypripediums; that is, fibrous peat and sphagnum moss, well chopped and mixed.

In winter the Cacti are watered as little as pos-

sible, and only when kept in a room where the air is dry and warm, or cold and dry, do they need more or less water. If in a greenhouse, but little water is necessary, as the dampness there yields sufficient by evaporation. It is better to water the paths even rather than the plants themselves. Pilocereus needs no water in winter; Phyllocacti require rather more, and Rhipsalides a larger amount still.

As summer advances, the quantity of water given should be increased, and in great heat may be poured over the plants through a rose.

Seedlings require rather more moisture, especially in summer. In winter a temperature of 4° to 6° C. is sufficient; in summer it may be very high if air is admitted, the ventilators being open even at night. B.

ORCHID NOTES AND GLEANINGS.

CATTLEYA GRANULOSA.

FROM Mr. Cobb, of Dulcote, Tunbridge Wells, we have received a specimen of this Orchid, with two lateral sepals, two lip-like petals crossing the sepals at right angles, with an erect flattened column, with imperfect anther on the top. The lateral petals and the ovary were entirely absent. The flower thus shows a tendency to diminution in the number of parts, such as is so very common in this order, and a tendency to increased irregularity by the formation of a second lip.

AERIDES LEDOUXIANUM (PROVISIONALLY NAMED).

A most extraordinary specimen of an *Aerides* with a remarkable history has just flowered in the collection of R. le Doux, Esq., West Derby, who showed it at the Liverpool Exchange News Room on Wednesday, August 10, when it created quite a sensation, not only among those who know Orchids, but the general public. On the following day it was shown at the rooms of the Manchester Orchid Society, where it secured a Silver Medal. The plant, which is a noble specimen of the *A. odoratum* type, bore between fifty and sixty splendid flower-spikes, the whole forming, perhaps, the best specimen of an *Aerides* ever seen. Its history is somewhat curious, for the exact locality from which it was collected cannot be decided by what is known of it, though we may be tolerably sure it was not Brazil.

During the lifetime of the late Mr. E. S. Rand, of Para, Brazil, he made an arrangement with Mr. John Cowan, of Gateacre Nurseries, Liverpool, that on his death the collection should be brought to this country and sold on account of his executors. Thus, when informed of his death, Mr. Cowan, Jun., proceeded to Para, and carefully packed and brought home the plants. The *Aerides* now under notice was established on a tree in Mr. Rand's garden at Para, and it measured 5 feet to 6 feet in length, by 3 feet across. When first placed on the tree it was a very small plant, and although it grew so freely it had never flowered until it received the check of removal (on the branch on which it was growing), the journey to Liverpool, and the change into Mr. Le Doux collection, where it is still displaying its wealth of fragrant flowers. Such an event speaks well of the enterprise of Mr. John Cowan and of his son, and it is highly satisfactory to the new owner of the plant, who prizes it highly.

POTATO DISEASES.

MR. E. ROZE thus sums up an important paper on the diseases of the Potato, contributed by him to the *Bulletin of the Mycological Society of France*:—

"1. DRY GANGRENE produced, 1st, by *Pseudocommis Vitis*, Debray.—Tubers free from smell remaining firm, and showing depressed, dark spots or perforations, surrounded, in the parenchyma, with a brownish band. Under the spotted epidermis, in the unsoftened parenchyma, are spots more or less brown or reddish, which are evident now here and now there with a clearer tint in all the tissue.

These tubers can be kept just so until spring, the season when they develop shoots, which bear brownish

or blackened spots at the tip. Planted, they give rise to the "Frisolée" disease. This alteration is often associated with the following changes.

Dry gangrene is also produced by micrococci only. In this case the tubers are free from smell, moderately firm, more or less spotted, but manifesting in certain places a loose epidermis, which does not resist the pressure of the fingers. Under this epidermis and in the parenchyma, white, grey, or brownish blotches, showing when the tubers are dry, brilliant and powdery starch grains.

Sometimes there are depressions, or even, in the greyish surfaces, small black masses (sclerotes of *Rhizoctonium*), and, later on, an abundant development of *Mucedinæ* (*Fusisporium* and *Spicaria*). The tubers, completely altered and dried up, become sometimes very light; at others they harden and get fragile. But in consequence of constant humidity, in partially attacked tubers, the micrococci continue to develop, and their mucus escapes even through the epidermis. This it is which renders contact in cellars of diseased and healthy tubers so dangerous.

2. WET GANGRENE, produced, 1st, by micrococci allied to *Bacillus subtilis*, Cohn.* Tubers partially or wholly soft, exhaling a disagreeable odour. Under the epidermis, whitish liquefaction of the parenchyma, with disengagement of butyric acid. Destruction slow and progressive, then complete in the tubers owing to the greater or less moisture of the situation. Contact with healthy varieties to be avoided.

Also by *Phytophthora infestans*, Bary. Tubers free from smell [?], showing a partial or complete damp softening. Epidermis shrunken, sinking on to the parenchyma, which is weakened, depressed, pasty, but not deliquescent. This parenchyma remains thus pasty, without wholly drying up.

If, now, I tried to establish a proportion between these four different methods of alteration in Potatoes, I should estimate at not fewer than 50 per cent. the number of tubers attacked by micrococci, and at about 25 per cent. the number of those affected by *Pseudocommis*. I am greatly disposed to believe, contrary to the general opinion, that the smallest proportion of tubers is infested by *Phytophthora*, which penetrates the tubers much less frequently than formerly, but which now continues no less to attack the stems and leaves of our Potatoes when these are not protected against it by treatment with salts of copper.

The remedies to be recommended to diminish as much as possible the effects of the different causes of change in the tubers may be summed up thus:—Alternation of crops, planting healthy tubers, destruction at harvest of all diseased Potatoes, and treatment of Potato-stems with copper solutions."

A DRUGGIST'S GARDEN.

ABOUT twelve months ago did the Manor House, Wallington, pass into the hands of Mr. Thos. Christy, who is exceedingly busy in an endeavour to bring it and the gardens into good condition. The Manor House and grounds occupy nearly 20 acres, and the land is situated between two roads, one of which leads to Hackbridge, the other to Croydon. The residence is a famous house, and parts of it are very old. Almost underneath the drawing-room even is an old Norman chapel, and quaint steps leading thereto. It is said that the first Italian roof put upon a residence in this country was that used in the case of the Manor House. There is evidence that at one time the gardens were the subject of intelligent interest, as, for instance, in the selection of the trees and shrubs, which, according to report, was the work of an Italian. Everything has since been neglected. The trees have overgrown each other, the fine, extra large, variegated Hollies

* Tubers plunged in water for two or three days, at a temperature of about 25°, show that they are infested with *Bacillus Amylobacter*. This bacillus must then attack the tubers of Potatoes growing in a too moist soil during the summer. But I have not met with it in crops of early varieties. As to tubers of late varieties, previously attacked by this bacillus, they are found completely destroyed when taken up in autumn.

* *Stanhopea Madouxiana*, *Cogniaux ex litt. F. Claes*.—Pseudobulbo ovoideo, squamis vetustioribus laciniatis vestito; folio amplo, satis coriaceo, graciliter longique petiolato, oblongo, abruptiuscule acuto, crasso 5-nervio; pedunculo elongato, pendulo, bifloro vel interdum unifloro; bracteis majusculis, ovatis, acutis; floribus amplis; sepalis reflexis, triangulari-ovatis, obtusis, convexis; petalis reflexis, late oblongis, obtusis, convexis, margine tenuiter undulatis; sepalis dorsali paulo brevioribus; labello carnoso, trilobo, sepalis subaequilongis, hypochilio elongato cymbiformi superne incurvo et leviter dilatato laevi basi eornuto, mesochilii cornibus carnosissimis pendulis ligulatis acutis subfalcatis, epichilio triangulari-ovato acuto integro; columna elongata, leviter incurva, inferne leviter compressa, superne latiuscule bialata. Crescit in Columbiae prov. Antioquia. H. F. Claes.

and other ornamental species are either in unsuitable positions, or are hidden by less worthy specimens. A year ago there were no lawns, unless a meadow-like greensward may be described as such; there was no kitchen-garden, and the Rockery, which, in spite of its neglected condition, may be capable of improvement, was utterly overgrown with undesirable plants. Mr. Christy has done much in the direction of improvement, by attacking the most needed reformatory first. There is now, therefore, a kitchen-garden, with good crops of vegetables, and young fruit-trees have been planted. There is a conventional but pretty flower-garden close to the house, and the surrounding lawn has been brought into as good a condition as the time would permit.

Walking with Mr. Christy through the vegetable-garden, we were made aware of a fact that we suspect

In this way Mr. Christy acquires plants without names, but with wonderful descriptions. They frequently turn out to be unimportant, no doubt, but now and again quite a new plant is flowered. Thus we were shown a new ornamental Begonia, several important Rubber-plants, and other species that may turn out to be valuable. But there is no doubt in respect of such well-known plants as the Coffees, Vanillas, Cocos (Erythroxylon Coca, and Theobroma Coca), which we noticed in some quantity, nor as to the Ginger (Zingiber officinale), the Pepper (Piper nigrum), the Arrowroot, &c. Piper nigrum produces the Pepper of commerce, though there are many other sorts of Pepper that are obtained from other genera. All Pepper-corns are black, and the white form is obtained by fermenting the seeds. Black Pepper has always the best flavour.

experimental stage, it may be possible to utilise the full length of the fibre contained in this plant.

We next notice the Cassia in bloom, the origin of the school-boy's medicine—"senna." It is a yellow-flowered leguminous plant, of quite ornamental appearance. One species, *C. occidentalis*, of the Indies, furnishes a Coffee in use by the negroes. Next is the Guaiacum officinale, which yields the Gum Guaiacum of commerce, and a very heavy wood also; Eucalyptus in several species; and the Cinnamon (*Cinnamomum zeylanicum*). This Lauraceous plant furnishes the best Cinnamon, and is cultivated extensively for the purpose in Ceylon. *Cecropia peltata*, the Trumpet-tree of the West Indies and tropical America, said Mr. Christy, will supersede the Bamboo for many purposes; its hollow, light wood grows very quickly. A friend sent the plants from Columbia, advising that they be planted out-of-doors, stating that in that country the tree grows to a height of 60 feet. *Passiflora edulis*, and many other economically interesting plants we saw, but must refrain from enumerating them. As we looked at a plant of *Ilex paraguayensis*, Mr. Christy surprised us by remarking that it is in great demand, and that even in England there are thousands of people now taking the Paraguay Tea as a beverage. We tasted it, a long time ago, but our memory of the liquid is still vivid, and we have no intention of repeating the experience. On the roof of one of the houses were *Cissus discolor* and *C. albonitens*, the latter with aerial roots 8 feet long. A variety of purple-leaved *Coleus* was noteworthy too, the leaves being larger in all respects than is usual.

Near to the southern entrance to the residence is a very old plant of *Wistaria sinensis*. It has been slung across to a variegated Holly-tree, and now covers the top of this. An iron chain from one to the other has become embedded at either end, through the growth made by the *Wistaria* and the Holly.

Before taking leave of Mr. Christy, our attention was drawn to a Wardian-case, then being filled with young rubber plants (*Castilloa elastica*) for exportation. The plants were dibbled into a compost in rows, and a flat lath placed over the surface between each. Then two laths were placed longitudinally along the sides of the case, and over the ends of those between the rows, thus securing the soil and plants from becoming loosened.

SHORT NOTES ON BULBOUS PLANTS.

(Continued from p. 98.)

HYMENOCALLIS (PERUVIAN SECTION).—The Peruvian species of *Hymenocallis* are really worthy of more extended cultivation than they now receive; they all produce beautiful flowers, are deliciously fragrant, and are of comparatively easy culture: they require a cool temperature during growth, and are very desirable plants for conservatory decoration.

H. (Ismene) Amancaes.—This is perhaps the most beautiful of them all: it has from eight to ten strap-shaped, distichous, grass-green leaves, 2 feet long, sheathing at the base; the flowers, which are usually four in number, and are borne on an erect scape 2½ feet long, are of a clear lemon-yellow colour, and measure about 4 inches across from tip to tip of the segments. The staminal cup is trumpet-shaped, 1½ to 2 inches across, six-lobed, with a somewhat fringed margin, lemon-yellow in colour, shading down to a light-green at the base; the filaments are adnate to the cup, and form six rich green lines on the inside, curving acutely at the margin to form a sort of barrier across the cup, evidently to facilitate insect fertilisation. The fragrance is very marked, perfuming the whole house in which it is growing, and may be said to be unlike anything else. Two flowers are usually open at the same time.

H. (Ismene) calathina.—This species resembles *H. Amancaes* in all its parts excepting the flowers, which are creamy-white in colour, and possibly a



FIG. 34.—STANHOPEA MADOUXIANA. (SEE P. 134.)

gardeners in rural districts may not know so well as their suburban confrères. The Cabbages were protected by nets, just as were the Strawberries; and it was affirmed it is difficult to preserve the Brassicas from the voracious appetites of the wood-pigeon. Mr. Christy has for many years been a zealous Fellow of the Linnean Society, he is also the head of a large firm of wholesale City druggists, and one department of his garden indicates that his greatest interest lies in the cultivation and distribution of economic plants. There is a good collection of these interesting plants, which his special knowledge of the value of drugs has led him to acquire. Mr. Christy disposes of the plants commercially over the whole world. He must have a wide correspondence, for as we pass along the house, this plant is described as having been sent from the West Indies, that from Queensland, the other from Colombia or Japan, others from east and west Africa, and so on.

The Nutmeg-tree too, is here. It is *Myristica moschata*, or officinalis, and grows to 25 or 30 feet in height, being cultivated extensively in the Banda Isles, Sumatra, Java, and the Mollucca Isles. There is also a large Camphor tree 9 feet high. Close to the plants which furnish all these tasteful articles was the deadly poisonous *Strychnos* (*S. nux vomica*), a member of the Loganiaceous group, almost all of which are more or less poisonous. The *Strychnos* is a native of India, grows to a moderate size, and its fruits somewhat resemble Oranges. Besides being a deadly poison, *Nux vomica* is also a valuable drug. There were many varieties of the *Strophanthus* that yield the heart tonic. Next we notice the Mahogany-tree (*Swietenia Mahogani*), but there are many kinds of Mahogany from various countries, and obtained from different species of trees. Passing a species of *Hibiscus* in bloom in the stove, Mr. Christy observed that by a new process, yet in an

trifle more fragrant; it makes a fine companion plant to *H. Amancaes*.

Hymenocallis (Ismene) Macleana is like a small *H. calathina*, with a little more green inside the staminal cup; the leaves are shorter, and the plant is hardier than the two preceding species. These species like an open and somewhat sandy soil; they require good-sized pots (24's will do for full-sized bulbs), and they should be started in a temperature of 55°, water being withheld until the growth appears above the soil—the bulbs should be quite buried below the surface. Once fairly away, water must be given in abundance, and the house carefully shaded till the flowers appear, or the leaves will collapse; it is advisable to loop up the leaves with a ring of wire or some other means, to prevent them from snapping off, as when young they are very brittle, the leaves if broken spoiling the contour of the plant. After flowering, they should be placed under a low-branched tree or on the shady side of a fence till the leaves turn yellow, just sufficient water being given to keep the soil damp, the object being to keep the foliage green as long as possible. If removed to a house again, the leaves go off quickly, and the bulbs have an unnecessarily long rest. When fairly at rest they must be kept dry, and stored in the Cape-house till growth commences in the spring.

Ismenes may be propagated by offsets or seed, *H. (I.) Macleana* being the most prolific in offsets of the three; it will be found quite hardy planted at the foot of a south wall where a little shade can be given. Several clumps of bulbs are now flowering freely which have been out all winter with me; they were planted 6 inches below the surface, and kept as dry as possible till they appeared above the soil. I notice the spathes droop somewhat during very bright sunshine, but they become erect again at night, and remain so during dull days. *G. B. Mallett*.

BOOK NOTICE.

PANSIES, VIOLAS, AND VIOLETS.

THIS little book, published by Messrs. Macmillan & Co., forms one of "Dobbie's Horticultural Handbooks," and though comprising in all no more than 100 pages, is written or compiled by four experts, viz., Charles Jordan, John Ballantyne, Jessie M. Burnie, and W. Cuthbertson. These act as chamberlains, marshals, and heralds to Queen Viola, whilst her poet laureate, whose name is omitted from the title-page, is the Rev. Dr. Williamson.

The history and evolution of the Pansy are very interesting, though, as usual, the earlier raisers took no pains to keep accurate records, and so many of their statements remain conjectural or unsubstantiated. The natural form of the Violet, which is the source of all the varieties introduced by the skill and patience of the raiser, is very unsymmetrical, but growers know no peace of mind till they have converted the unsymmetrical flower of the field into the circular blossom of the exhibition stage. To enhance size (within limits), colour, substance, and fragrance are worthy objects of attempt. To alter the character and form of the flower without reason smacks of caprice or mischievous meddling. The natural form of the flower has a history and a meaning. It tells of centuries of gradual adaptation and of the reciprocal action of insects; it affords a clue to the genealogy and relationships of the plant. It is no mere purposeless, capricious arrangement of sepals and petals, but the outcome of adaptation and purpose. Can we say so much of a flower distorted from its natural shape, and with all or much of its history deliberately effaced? The richness of colour and its distribution, the smoothness of outline, are matters wherein the florist has wrought great change for the better; if he would follow Nature's indications in other respects as well, he would, we are sure, reap a rich reward.

In the meantime, if we put aside all such considerations, and look on florist's flowers as the outcome of the fancy of the raiser or the taste of the spectator, it must be admitted that the Pansy growers

have greatly enhanced the pleasure of our gardens and the glories of the exhibition-table. Particularly are we indebted to those growers who have given us so much beauty in the "Violas," or "Bedding Pansies," for we do not pretend to be able to draw the line between them. The plants, whatever their name, are easy to grow, not fastidious as to soil. The wealthy may expend more upon their favourite plants, but spend as they may they cannot get more pleasure from them than can the growers of these inexpensive plants, which are thus popular in the best sense of the word. We have good reason, therefore, to thank the compilers of this little work for a very interesting history of the group, and for vignette portraits of those who have been prominently concerned in it. The chapter on the Botany of the Pansy is worthy of commendation, but we should have been glad to have seen the substance of Dr. Wittrock's paper, also given as by far the best account we possess.

It is needless to say the cultural details are up-to-date, and we fully sympathise with the authors in their desire to see the culture in pots revived. Any one who has a frame may enjoy a profusion of bloom in late spring and early summer, as occurred fortuitously to the present writer.

Mr. Baxter, in a letter to one of the authors, gives the history of the popular variety *Duchess of Fife*. This originated from Goldfinch, as a sport or bud variation. The sport showed itself at one joint, hence Mr. Baxter "lifted the plant, took away the shoot with a few rootlets attached, cut the shoot down to the joint, where it sported and left only two leaves at that joint, and made it grow at that joint only. As it sported only in dry weather—both times—I thought it advisable to keep the sport dryish till it grew through the sporting-joint, and I therefore buried a 6-inch pot upside down and planted the shoot just above the pot, placing a hand-glass over it during rain."

In speaking of the use of *Violas* for the flower-garden, it is not possible to overlook the great services of the late John Fleming, stimulated as he was by the taste and enthusiasm of Harriet, Duchess of Sutherland (not Mary, as our authors write).

HAMPTON COURT.

THE royal gardens are looking extremely well this year; all the best features of the past years are maintained, bad ones have been expunged, and new ideas adopted with very pleasing results. I went on August 2, the day after Bank Holiday, generally rather a bad time to choose, 'Arry and 'Arriett often being a good deal in evidence. This year, however, there were fewer of the genus parading the gardens, and those present behaved in a more orderly manner than usual. Education has been beneficial in this particular at any rate, whatever other evils it may have caused or failed to eradicate. Nature, as represented in plants, being more interesting than the human species, to us, just now, I will try to describe a few of the best and most striking beds. A very pretty one was composed of the blue *Campanula carpatica* and its variety *alba*, the edging being a dwarf, dark-leaved, scarlet *Nasturtium*. Red, white, and blue, mixed, sometimes look vulgar, but this bed was not in the least so. I should say by the number of buds yet to come out, that it would last in perfection to the end of August, or even longer. Another attractive bed was a round one filled with various-coloured *Antirrhinums*. There is something very pleasing to the eye in a group of these flowers. Their colours are so rich, the habit is so good, and the fact that they do not require staking, gives them a natural appearance, which is by no means their least charm. Interspersed were a few of the *Tom Thumb* kind; these, though not so graceful, help to cover the soil between the taller ones, and so fulfil a good purpose. We all know what a charm there is in novelty, and that this is so in plants, no less than in other things, is evidently the theory of the authorities of these gardens. One bed especially was distinctive in

this respect. It consisted of golden-plumed *Celosias* and a blue-grey *Selaginella* as a carpet, I was going to say but, really it was not planted closely enough for that, as it showed a good deal of the cocoa-fibre between. But, notwithstanding, it was a pretty bed, and moreover, could easily be copied. So also could another pretty bed filled with the tall *Campanula pyramidalis*. It was, I suppose, intended to be all white, but an interloper at one corner had turned out blue. This plant is elegant in form and not difficult to grow well.

There were several beds of subtropical plants, some of which looked very handsome and stately, but there were others which did not look at all happy, notably some Palms of a decidedly bilious hue. I suppose the first cold days of June had tried them, or they may not have been hardened off properly. On the other hand, it is not often one sees a greenhouse plant in such splendid health out-of-doors as was the *Plumbago capensis*. Each plant was a picture of beauty, both in form and colour, a credit indeed to all. There was a very good circular bed of a salmon-pink *Carnation* much resembling *Raby Castle*. The flowers were plentiful and compact, not splitting the calyx to any extent, and the "grass," being abundant and of a healthy hue, set them off to perfection. A few beds containing flowers which grew rather stiffly and much the same height, were not a success, though otherwise well set out from the absence of tall and graceful foliage plants wherewith to relieve the monotonous level. I noticed one marked difference in this year's bedding, one likely to please too—the number of carpet beds has "grown beautifully less." When we did come upon one, "the consequence was," as the children say, it was quite a treat, forming, as it did, such a complete contrast to those around it. "Quite a work of art," was our verdict.

The long border on a line with the back of the palace has a sweet old-world look. It makes one think of the days of long ago, when the staid King William and his wife Mary paced the walks in happy content at having a few hours to spend away from all the poms and ceremony of what was even then the busy, noisy world of London.

The plants were well arranged, and most of them were very well grown. The *Hollyhocks*, both double and single, were very fine, as also were several specimens of *Bocconia cordata*, a graceful hardy perennial, which ought to be seen in gardens more often. Annuals, too, were well represented in this border, the *Salpiglossis* being particularly beautiful. There were some of a velvety-crimson colour, and a little way off were some so dark that they were almost black. I fancy these would have looked better if placed amongst the lighter ones, as their appearance was very sombre. There were several groups at short intervals of the bulbous *Hyacinthus candidans*, with its white bells and rich green leaves. This plant evidently enjoyed the situation, as I have never seen it look more healthy. Another plant, *Anemone japonica alba*, did not seem to relish its surroundings, for there were scarcely any buds to be seen. I was surprised at this, as in the gardens in the neighbourhood they were all in bud, and some in bloom.

There were some good *Asters* (*Michaelmas Daisies*) out, some of the blooms were from 2 to 3 inches across, and the shades were lovely. Dotted here and there were clumps of *Beet*. The colours were bright, certainly, but to my mind they did not improve the border. We forgive their appearance in the flower-beds in winter, for they supply gaps which would otherwise be difficult to fill; but in summer, when there such a wealth of richly-coloured flowers and foliage plants to choose from, they do not seem to be required.

There are some delightful grassy walks on the other side of the wall, along which this border runs. It is very pleasant to wander about here, the grass is so soft to the tread, and there are so many attractive objects for the eye to rest on. The *Yuccas* were in full bloom, and towered up some 8 or 9 feet high, their topmost flower-bells just catching the glorious rays of the setting sun, and reflecting, in consequence, a faint pinky hue. This seems to have been

a good year for these shrubs, albeit one might have expected just the reverse.

The Roses were all but over, but the almost perpetual-flowering Violas looked very pretty. One clump especially was very fresh and bright. The flower was of a primrose-yellow colour, with a distinct purple edge to each petal. Most of the plants I have mentioned were not labelled, so far as I could see, but this Viola bore the name "Duchess of Fife," somewhat to my surprise, as it was the counterpart of one called "Goldfinch." The latter possesses a delicious perfume, much stronger than that of almost any other Viola; but with this exception the two are identical; indeed, on reaching home I looked out the names in question in the cata-

other things there were which merit a word on their behalf, but for lack of space I must now close this article, hoping that my readers will go and see for themselves what a great amount of quiet pleasure can be obtained from a saunter round these charming old gardens. *V. P. Biddles, Kingston-on-Thames.*

PLANT NOTES.

ARISTOLOCHIA SIPHO.

WE remark in the last issue of *Möller's Deutsche Gärtner Zeitung* a notice of this handsome climber, and an illustration from a photograph of the plant in

writer of the article, Mr. A. Rehder, of the Arnold Arboretum, U.S.A., recommends that the *Aristolochia* be planted at some distance from the bole of a tree, and when the growths are strong enough, to take them up into the crown direct from the ground, so as to afford the young shoots a good opportunity of climbing unassisted into the tree. If a strong young plant be set out in good soil, one has not to wait for many years for a good effect.

EREMURUS ELWESIANUS.

OF all hardy Liliaceous plants, none is more striking than the species of *Eremurus*, and of all the *Eremuri* none is more beautiful than *E. Elwesianus*, with its noble spikes of starry, rosy-white flowers. It is very handsome as a specimen plant, but what a row of it looks like may be judged from the accompanying illustration (fig. 35, p. 137), obligingly forwarded to us by M. Marc Micheli, whose garden near Geneva is a veritable treasure-house of new and interesting species.

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 79 to 85.)

(Continued from p. 117.)

5, SOUTHERN COUNTIES.

BERKSHIRE.—Owing to the late season and deficiency of rainfall, I can hardly express an opinion as to the "quality" of fruit, with the exception of Strawberries, Raspberries, and small fruits, which are abundant and very good. Strawberries very heavy crops of most varieties, and the flavour is good, but not very fine fruit, and the season will be short here, unless rain comes soon. The land is very dry and cracking, and the rainfall for the last six months has been only half the average for the district. *Owen Thomas, Royal Gardens, Windsor.*

— The prospect of a good fruit crop was of the most promising in the early part of the season, but the fulfilment has come far short of the average in our immediate neighbourhood. Pears are very scarce, and Morello Cherries, that set remarkably well, have lately cast most of their fruit. Nectarines on walls are a very scarce crop, but Apricots promise some good fruits. We suffered a great deal from the cold nights in May, and had a deal of blight. *J. Howard, Benham, Newbury.*

— Apples, although below average, are a better crop in this district than last year, there being a sprinkling of Blenheim Orange Pippin and other late-keeping varieties which failed us last year. Pears are a poor crop on wall trees, worse on pyramid trees, and almost absent in the orchard. Of Plums, Victoria only has a full crop on wall trees, but all kinds are a failure on trees in the open. Sweet Cherries a good crop on wall trees, but there is none on orchard standards. Peaches and Nectarines are an average crop, and the trees are healthy. Apricot trees were in full bloom when we had the coldest weather of the winter, the end of March, consequently the crop is poor. Strawberries, though late, have been an enormous crop, and the bulk ripened satisfactorily. *T. Turton, Maiden Erlegh Gardens, Reading.*

DORSETSHIRE.—Apple trees are badly infected with mildew, and bear a short crop; and the best varieties are Beauty of Kent, Cockle Pippin, Dutch Mignonne, Ecklinville, Ribston Pippin, and Striped Beaufin. Pears are also very short; the best of the varieties are Ne Plus Meuris, Catillac, Beurré Diel, Glou Morceau, Madame Treves, Marie Louise, and Williams' Bon Chrétien. Strawberries have been very good, especially Royal Sovereign. *Thos. Denny, Down House Gardens, Blandford.*

HAMPSHIRE.—Fruit crops are, on the whole, disappointing, considering the wealth of bloom and general prospects in early spring, the prevalence of cold, damp weather being no doubt the cause of the partial failure of crops. Small fruits and Strawberries are really the only good crops here, the latter especially having been very good, Royal Sovereign



FIG. 35.—EREMURUS ELWESIANUS, FROM THE GARDEN OF M. MARC MICHELI, NEAR GENEVA.

logue of a nurseryman who makes a speciality of Violas, and found that almost the same description was given to both. We have, I think, quite a big enough nomenclature without all these needless synonyms so common in horticulture. *Eryngiums* always seem to have an aristocratic air about them wherever one meets them, and those at Hampton Court showed particular signs of blue blood in their veins, the leafy bracts, covered with a delicate bloom, looking lovely in the evening light. These plants should have more extended culture in the grounds surrounding "the stately homes of England," for they give an air of distinction not always easy to be got. Both this and the *Echinops* (Globe Thistle), of which there were some fine specimens, require a background of shrubs to do them justice. Many

the botanical garden at Jena. Too often *Aristolochia siphon* is employed in a formal way to cover a pergola, an arbour, or a wall, none of which methods shows the entire natural beauty of the plant. But allowed to climb into a tall tree or trees without any assistance from man is the manner to show off the capabilities of the plant, and bring out all the beauties of this Liana-like climber. The ground as well as the branches and limbs of the tree is covered with a complete tangle of the thin *Aristolochia* stems; and from these spring other stems clambering into the light by the aid of the old stems, and adding greatly to the picturesqueness of the whole.

Naturally, a planter would not plant an *Aristolochia* against a valuable tree, as its embraces would, it is to be feared, end in the death of the tree. The

having quite maintained its character as one of the best varieties grown. Monarch has been disappointing here, about 75 per cent. of plants, both old and young, failing to bloom. Pears are best on walls, both espalier and pyramid trees being a failure. Amongst Plums, Victorias are much the best. *Wm. Pope, Castle Gardens, Highclere.*

KENT.—This year, thus far, has proved to those growers who have all their eggs in one basket that it is a mistake. Take, for instance, Cherries. For several years past this fruit has paid better than any other fruit—Hops not excepted; consequently, large breadths have been planted; but I regret to say that, owing to adverse weather, the last two seasons have been most disastrous. Apples, although an average crop, have certainly not come up to expectations. The wealth of bloom was enormous, which set well in places, and there was promise of an enormous crop, but recently the fruits have dropped when of the size of a pigeon's-egg, and larger. All varieties seem to have suffered alike. We have fair crops of Ecklinville, Stone's, Golden Spire, Grenadier, Warner's King, Tower of Glamis, Worcestershire Pearmain, Ribston Pippin, King of the Pippins, The Queen, Frogmore Prolific, and Prince Albert; Blenheim Orange and Cox's Orange Pippins are poor, and the trees of Lord Suffield are entirely mildewed. Peach and other wall-fruit trees that were washed in the spring to clear them of aphids, have made good growth, but from present appearances, the fruits will be rather smaller than usual, owing to the cold nights we had in June and July. The crop of Gooseberries has been enormous; a large bulk has been gathered green, but immense quantities were left on the bushes to ripen. One of the best—if not the best—grown in this county, is Howard's Lancer, a strong grower, fruit white, of enormous size, splendid quality, and a heavy cropper. Strawberries: Royal Sovereign was excellent, carrying an enormous crop of large fruits of good quality. If flavour is wanted, what have we to equal Dr. Hogg, or the Viscountess? I saw these two varieties remarkably good at Mr. Bunyard's grounds; the plants were exceptionally strong and well cropped owing to the method of selection this firm employs. Plums promise well. Early Rivers especially is carrying a large crop. Damsons, perhaps, will be over average. American blight is very prevalent this year, the trees in many old orchards about here are white with it, and I find it necessary to wash with quarter pint of petroleum to four gallons of water to keep the pest in check. We use a Vermorel's knapsack, and well mix the oil and water in a can with a syringe; afterwards it can be kept mixed by the operator shaking the vessel upon his back. *Geo. Woodward, Gr., Barham Court, Maidstone.*

—The fruit crops in this part of Kent are very satisfactory. Apples are very plentiful with us; trees of Cox's Orange Pippin are very heavily cropped, and we have been obliged to thin the fruits of many of the common varieties. No caterpillar pest has devoured the foliage. The Pear crop is patchy, and it is only a few varieties that are bearing fairly well. Peaches and Nectarines set well, and blister has given us but little trouble; on the whole the crop is a heavy one. Raspberry Superlative has done excellently, and it is getting generally liked. Attention to affording water to the roots of fruit trees, owing to the drought, has been very necessary. *H. Markham, Northdown, Margate.*

—A peculiarity of the season in this district is the abnormal quantity of "vermin" on Apple trees, which give the trees the appearance of being scorched. The Apple trees are troubled, too, with a new pest in the shape of a dark fungus growth, nearly like ordinary mould, except that it is a dirty black-brown colour. This is most apparent on Lord Suffield Apples, and a few kindred varieties. *Champion Brothers, Mereworth, Kent, and Boro' and Covent Garden Markets.*

MIDDLESEX.—The trees never promised better early in the season, and after a poor crop the previous year we expected good crops this year, but the result is poor indeed—we never had fewer Pears. Early

varieties of Apples are cropping well, but good keepers are very scarce. Plums are a failure, both wall, trees, and others. Apricots, Peaches, and Nectarines are thin, doubtless owing to the frosty winds experienced when the trees were in bloom. *G. Wythes, Syon House Gardens, Brentford, W.*

—The promise on all fruit trees indicated a record year, but the cold winds and cold nights up to the end of June seriously affected all the crops except the Apple crop, which is very good. I have never known such a bad season for aphids. The Peach, Cherry, Plum, and Red Currant trees have been violently attacked, particularly the first-mentioned. *S. T. Wright, Royal Horticultural Society's Gardens, Chiswick.*

—All fruit crops outside with us are much later than usual this year, fully ten days. The most disappointing crops are Plums, and next to these Pears, both of which promised so well. These were in flower earlier than usual, a spell of cold weather punishing them severely at the critical period. Apples were held in check in time by the cold which did this harm, hence they escaped. Cherries are a very heavy crop on walls, and of good quality, but correspondingly late. Apples are good, and are swelling freely. Strawberries also are excellent in crop and quality. The green-fly was very troublesome to the Peaches and Nectarines, persistently so, but, thanks to a free use of Quassia extract, it was beaten. The black-fly was not so troublesome, but every appearance of it was attacked with the same remedial measures. The drought in this locality is becoming serious, watering being a heavy item of labour. *Jas. Hudson, Gr., Gunnersbury House, Acton.*

SURREY.—Having been pretty well all over the county of Surrey, I have found the best tree crop to have been Cherries, although these were not a fine sample. Morellos set abundantly, but have very much fallen since. Apples are a very light crop even in the warmer districts. Pears and Plums are still smaller; indeed, may be described as miserably thin. The best crop of the year is found in Gooseberries, as these seem to have been everywhere in remarkable abundance. Red and Black Currants are very fair crops, but want rain to swell the fruit. Raspberries should be abundant also. Strawberries have been good in holding soils, and where well mulched; in light soils the crop was moderate, except on young plants, and where cultivation was of the best. Small Nuts and Walnuts seem generally plentiful. We have seen enough this season to make us credulous as to the value of a great show of blooms in the spring. *Alex. Dean, Kingston.*

—Never before had the fruit-trees given better promise of an abundant harvest until late frosts affected the crops, so that in many places a very moderate harvest will be the result; here, however, we have partly escaped the general havoc, and have heavy crops of Apples, and taken all through, Pears are also good, though some varieties, notably, P. William's Bon Chrétien, are rather thin; small fruit generally is good, Morello Cherries being an exceptionally heavy crop. Blight and insect pests have been troublesome. *J. F. McLeod, Gr., Dover House, Roehampton.*

—Apples are swelling fast, and promise to be good. The varieties that are the best cropped are culinary varieties Duchess of Oldenburgh, Stone's, Ecklinville, Lady Henniker, Grenadier, Wellington, Lord Grosvenor, Tower of Glamis, Mère de Ménage, Golden Noble, Stirling Castle, and Hornead's Pearmain, one of the best late Apples. Dessert: Mother, Lady Sudeley, Ribston, and Blenheim Orange Pippins. Strawberries are fine in berry, but owing to the drought were soon over. Raspberries were good, especially Superlative. *C. J. Salter, Gr., Woodhatch Lodge, Reigate.*

WILTSHIRE.—On walls protected by glass coping, all fruit crops are good in these gardens, viz., Apricots, Pears, Plums, Cherries, Peaches, and Nectarines, also Figs, but without such protection they are comparative failures. In many instances not only the fruit, but the leaves also, are destroyed. Those varieties which have suffered most severely are Lord

Suffield, Sturmer Pippin, Alfriston, and Cornish Gilliflower; and in Pears, Marie Louise, Forelle, Bergamotte d'Esperen, and Glou Morceau. In some instances the trees are almost leafless. This injury was undoubtedly caused by the exceptionally cold weather we experienced throughout the month of May, as well as by a terrific hailstorm we had on June 2. *T. Challis, Gr., Wilton House, near Salisbury.*

(To be continued.)

BUDDLEIA VARIABILIS.

DR. HENRY was the first to discover this plant in the mountains north of Ychang. Mr. Hemsley was the first to describe it in the *Journal of the Linnean Society*. It was introduced into France in 1893, and exhibited for the first time at a meeting of the National Horticultural Society of France in 1894. On March 16, 1898, a coloured figure was given in the *Revue Horticole*, together with a description from M. Maurice de Vilmorin. Later still, in the same year (August, 1898), it was figured in the *Botanical Magazine*, t. 7609. Specimens have been obligingly sent to us by Mr. Gumbleton and Messrs. W. Paul & Son, of Waltham Cross. By the last-named exhibitors the plant was exhibited before the Royal Horticultural Society, and obtained an award. It is unnecessary, in the face of so much description and illustration, (see fig. 36, p. 139) to say more than that it is (presumably) a hardy shrub, with much of the habit of *B. Lindleyana*, a species we have found to be hardy, unless in exceptionally severe winters, when even *Buddleia globosa* is killed to the ground near London. The leaves are shortly stalked, lanceolate, acuminate, finely serrulate, dark green, but covered with a thick white felted stellate down on the under surface, and with small ear-shaped interpetiolar, leafy stipules at the base. (See Masters on the "Foliation and Ramification of *Buddleia auriculata*, *Journ. Linn. Soc.*, December 1, 1881.) The density of the inflorescence its degree of branching, the more or less foliaceous nature and conspicuousness of the bracts, are all subject to variation, as is likewise the colour of the flowers. Generally they may be described as more or less deeply lilac, with an orange throat; but as the specimen withers, they speedily become uniformly brown. M. de Vilmorin notes the variation in colour, and so does Mr. Gumbleton, in a letter with which he has favoured us, so that the term *variabilis* is well justified.

MARKET GARDENING.

MR. P. R. MORSE'S FRUIT-FARMS.

THE chief industry within a radius of 3 miles from Hatfield Peverel and Witham (both places having stations on the main-line of the Great Eastern Railway Company) is that practised on Mr. P. R. Morse's fruit-farms. So great indeed is the industry thus afforded, that nearly all the yearly holidays given to the children attending the several local schools are merged into one extended term, so as to fit in with the fruit-picking, commencing with the Strawberries, and following with Raspberries, Black Currants, Gooseberries, and Red Currants. As they are paid so much per pound and peck for gathering the several kinds of fruits mentioned above, mothers and their children earn good wages during the period covered in gathering, the produce of about 60 acres of Raspberries, and 40 acres Strawberries, Currants, and Gooseberries, heavy crops of the several kinds of fruit indicated being secured, packed, and despatched to London and other large commercial centres. A space of 5 feet is allowed between the rows of Raspberries, which include such excellent varieties as Carters' Prolific (mainly) and Superlative, the intervening spaces receiving a good manual surface-dressing as considered necessary in order to maintain a vigorous and fruitful growth in the canes, the horse-hoe or cultivator being run between the rows of canes two or three times in the year, as much with a view to stirring the soil to accelerate growth as to cut down any weeds that may spring up. The same



FIG. 36.—BUDDLEIA VARIABILIS: FLOWERS LILAC, WITH A GOLDEN EYE. (SEE P. 138.)

remarks apply to plantations of Strawberries, Gooseberries, and Currants.

Plantations of Tomatos to the extent of three or four acres, set in rows $3\frac{1}{2}$ feet apart, and at about 1 foot from plant to plant in the rows, were bearing good crops of fruit, some of which were beginning to colour at the time of my visit (August 6). The plants are secured to a wire running along each row, about 15 inches from the ground, and fastened to small posts driven into the ground at intervals, close enough to keep the individual wires fairly tight. The natural soil being of a light gravelly description, and not so deep as could be desired, the plants appear to have been either planted on the top of "raised" drills or ridges, or to have had some soil drawn up to them on either side afterwards, with a view to affording a greater body and depth of soil for the plants to root in, and at the same time to ensure a more uniform degree of heat and moisture about the roots. The plants, as might be expected in the conditions mentioned, coupled with the long spell of dry, sunny weather which prevailed up to the day of my visit, have made a dwarf, sturdy, and fruitful growth. The much-needed rain which fell steadily the whole of the following day (Sunday) will prove most beneficial to the crop in swelling up the fruits considerably, and if followed by fine, sunny weather for a week or two, remunerative crops of fruit will be secured from these plants. We may add, that Tomatos have been grown four years in succession in the same ground, and evidently without exhibiting any ill-effects in consequence thereof, although one might have reasonably expected the ground to have become "Tomato-sick" as a result.

Plantations of Apples and Plums have been made in recent years. It may be interesting to know that it is only eight or nine years since Mr. Morse began fruit-growing on certain portions of his farms. The several fields devoted to the culture of fruit are favourably situated as regards situation and aspect, the soil being also suitable for the purpose. Mr. Morse's fruit farms extend to within one mile of Hatfield Peverel station (whence all produce is despatched), and to within 3 miles of Witham, the latter town being the postal address.

THE HATFIELD PEVEREL VINERIES

are situate a little over a mile from Hatfield Peverel station. They consist of eight well-built and efficiently ventilated and heated spans, which have been erected within the last eight years, together with packing and potting sheds and engine-house, above which is fixed some feet above the highest house a large galvanised iron tank, from which the water is laid on to the several houses for distribution through the hose when attached to the stand-pipe, the supply being pumped out of a well by the steam-engine. No. 1 house is 110 feet long, 25 feet wide, and of good height. This house is planted with Gros Colmar and Muscat of Alexandria Grape-vines, Colmars being on one side, and Muscats on the other, the Vines being set 4 feet apart. No. 2 is 200 feet by 25 feet, and is planted with Gros Colmar throughout, with the exception of one Vine of Muscat of Alexandria, which was carrying 42 fine bunches on a 15 feet rod. No. 3 is 208 feet by 25 feet. It is planted with Gros Maroc, Gros Colmar, Lady Downes', Black Hamburgh, and Madresfield Court. The Vines (cut-backs) were planted in this and two preceding houses, seven years ago, and one and all were carrying immense crops of large solid bunches, consisting of large fleshy berries, the bunches literally touching each other. And in proof of this statement I may say that I counted thirty-nine bunches of Muscats on one Vine, which I selected as a fair sample of the crop in No. 1 house; some of these bunches would, I expect, turn the scale at $2\frac{1}{2}$ lb., and where well exposed to the influence of the sun, they were assuming the coveted golden-amber tint which is always present in examples of good cultivation of this much-sought-after Grape. I also counted ten good bunches of Gros Colmar on 1 foot of main rod. Equally heavy crops of fine bunches of Black Hamburgh, Lady Downes', and Madresfield Court are coloured, and colouring beautifully, as also is a

tapering, well-proportioned bunch of Gros Guillaume. The crops of Black Alicante and Gros Maroc are also very heavy, and give promise of finishing most satisfactorily. Readers of these notes may naturally ask, What about next year's crop? And my answer is, that judging from the exceedingly vigorous condition of all the Vines in the above-mentioned vineries, the wood being extra strong, short-jointed, hard, and brown, and the immense leathery leaves, and also bearing in mind the fact that the said Vines produced and ripened satisfactorily heavy crops—according to age and length of rod—during the two preceding years, my answer is, that the Vines, if subjected to the same skilful treatment that has been bestowed upon them during the last seven and a-half years by Mr. Young, the manager, will yield as good crops of Grapes next year as this. Of this I have no doubt whatever. There is a heavy mulch mainly of horse droppings on the Vine-borders, which had been watered a few hours before I made my visit of inspection, which prevented my seeing the description of soil which composed the borders, so, in reply to my question on this point, Mr. Young informed me "that the Vines were growing in the same kind of soil as the Tomatos, both inside and outside—light, gravelly soil!" "Then," I remarked, "you must feed the roots liberally and frequently with a good, rich fertiliser." "Yes," said Mr. Young, with a knowing smile, "the borders have been surfaced, dressed with artificials before applying water during the last few months." An examination of the mulch without disturbing it, revealed a net-work of young, quill-like roots—a fact which proved conclusively that a liberal and judicious use had been made of top-dressings of artificial and stable-manure, and that copious applications of water had been given at the roots to produce and ripen such enormous crops of first-class Grapes, and at the same time to make such splendid wood for another year. Not a trace of red-spider was to be seen in any of the houses. Before leaving the Vineries for the Tomato-houses I may say that it has never before been my good fortune to see such magnificent crops of Grapes—not even excepting the fine examples of Grape-culture which I have seen in the Clovenford and Fordingbridge vineries a few years ago.

No. 4 house is 225 feet long, 18 feet wide, and about 15 feet high from floor to bottom of ridge, contains 1,200 plants of Tomatos; these, like the plants in the four following houses, are secured to strings twisted loosely round the individual plants close to the ground, and fastened to longitudinal wires fixed to the rafters overhead, the plants being set in rows 18 inches asunder, and at 1 foot or so from plant to plant in the rows. And these in their several stages of growth—some finishing the tail-end of the crop, others in full bearing, and others swelling their first clusters of fruit close to the ground—bore evidence of sound cultural skill having been applied or directed by a master hand, the clusters of fruit and the individual fruits, smooth and round, being large and fine; I never saw better, if so good, the plants being very robust and clean, as well as prolific. The borders were not mulched, but they undoubtedly must have had generous applications of artificials immediately before applying ample supplies of water at the roots. Being Saturday, all the houses had been watered shortly before I arrived, and a goodly sprinkling of well-washed pebbles remained on the surface of borders in Tomato-houses. Houses Nos. 5, 6, 7, and 8 are respectively 100 feet by 25 feet, 160 feet by 14 feet (two), and 80 feet by 14 feet. The houses (mostly) have two-flow 4-inch pipes at front on either side, with one return on either side centre pathway. Mr. Strong makes a free and evidently judicious use of the top and side ventilators in his vineries and Tomato-houses.

In the vineries I observed several fine specimens of Maidenhair Fern (*Adiantum cuneatum*) for cutting from for marketing, and numerous plants of the Chrysanthemum and Pelargonium (scarlet and white) for the same purpose were located outside.

In conclusion, I should like to record my indebtedness to Mr. and Mrs. Strong for the hospitality and courtesy which they extended to me on the occasion of a most enjoyable and instructive visit. *H. W. Ward, Rayleigh, August 8.*

AMERICAN NOTES.

A NATIONAL UNIVERSITY FOR AMERICA.

WHILE it seems fortunately improbable that serious attempts will ever be made to establish this institution, there have been developed under the protection of the Government a series of scientific bureaux which, taken together, present many of the characteristics of a university, and which perform some of the same functions. This is very notably true of the original research work done in various lines of applied science under the immediate supervision of the Department of Agriculture. There are in this Department several well-organised, fully-equipped, and efficiently-officered divisions. One division is concerned with entomology, another studies vegetable pathology, another animal pathology, still another handles pomological problems; one division is devoted to questions of agricultural chemistry, and one to soil physics, and other divisions to other related branches. The original investigation in some of these divisions is of a very high order, and the facilities for advanced work in such agricultural-scientific problems are, in certain particulars, very attractive.

Up to the present time, however, these bureaux have been open to visitors only upon sufferance, and no students of any sort were admitted. Investigators in similar lines elsewhere in the United States, Canada, or Europe, have always been very liberally treated whenever they cared to make use of the libraries or museums of the Department; but such helps have been quite incidental to the regular work. It is plain to those who are familiar with the circumstances, that a small number of men, who are capable of the most advanced independent study, might possibly be accommodated with a more extended and systematic access to the facilities of the Department without in any way interfering with the present work. Such advanced students, under certain very strict regulations, could establish themselves in Washington, could use the laboratories, museums, libraries, and could have the counsel of the scientific experts there, and could therewith make better progress in certain lines of study than in any of the universities of the land. In fact, I know of one man who will presently go there in preference to taking work with one of the most noted instructors in America.

The officers of the Department of Agriculture have recently given these questions more than the usual amount of thought, and have seen their way clear to opening such opportunities in a limited way. Mr. Wilson, the Secretary of Agriculture, has lately announced officially the willingness of the Department to receive some such advanced students. His letter evidently rests upon a well-matured conclusion, and marks a new departure of the greatest importance to the more advanced study of the scientific problems connected with agriculture and horticulture. Mr. Wilson sets forth the facts and conclusions in his letter as follows:—

"Education in the sciences relating to agriculture, in an organised form, originated with Congress in 1863, when the agricultural colleges were organised, and in 1887 (I think) when the experiment stations were provided for. The best work done in these institutions is in their agricultural departments, where students are trained in the sciences related to agriculture, instead of getting a purely literary course of instruction. The United States, probably, has the best system of education along this line in the world.

"But when students are graduated in these institutions, they have no university especially designed for instruction in special work. The result is, that students who intend to prosecute some specialty after leaving college, begin to specialise in college, perhaps before they have become sufficiently trained in the subjects that pertain to a broad general education. There is really no time to specialise in a four-years' college course; it should be done afterwards, and, in fact, many of our best scientists have pursued post-graduate work in the institutions where they received their collegiate training.

"It has occurred to me that the sixteen scientific divisions of this Department could offer better facilities for this work than most of our agricultural colleges. Our scientific bureaux and divisions are directed by able men, are well equipped with laboratories and libraries, and the chiefs and assistants could direct the studies of a few young men without detriment to their work. It would not be necessary to charge either tuition or laboratory fees.

"The benefit to the Department would appear when wealthy colleges took away, as they sometimes do, our scientists, by offering them higher salaries than the law provides for the Department of Agriculture. When this occurred, we could turn to these young men for material to fill the vacancies. Moreover, when the colleges in the several States applied to us for young men trained in special scientific lines, we could put them in correspondence with students here.

"One hundred of these students could be distributed through our divisions without detriment to our work. The great object aimed at in establishing the system of agricultural education would thus be materially helped. Whether we would give degrees, or certificates of the work done, I have not yet determined. These young men, with the approval of the chiefs of division under whom they study, could be placed on the eligible lists of the Department without civil-service examination. It would open up another avenue for the young farmers of the country who devote time to the acquirement of knowledge along these lines." *F. A. Waugh.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Globe Artichokes.—Plants that have ceased to bear heads should be denuded of the old stems, cutting off these at the ground-level; and copious application of water afforded to the soil in order to enable the plants to mature the season's growth. Unless the Artichokes that were planted late in the spring of the present year were strong, and soon got well established, it is not desirable to allow them to produce more than three flower-heads apiece, and all others should be rubbed off when quite small. Let these young plants have plenty of nutriment in the form of liquid-manure water, and also a mulch of manure.

Cardoons.—In order to obtain fine stout stalks, the treatment should be identical with that of Celery. By the end of this month the plants should have attained their full size, when blanching may be begun; and the most convenient and best mode of blanching is to gather the leaves altogether, and wrap them round loosely with hay-bands or straw, and then earth-up in the manner of Celery. Growth during hot weather is greatly assisted by liberal applications of water to the soil, indeed at no time should the plant lack moisture at the roots.

Capsicums and Chilies.—Plants of Capsicums or Chilies that have been planted at the foot of south walls and on south borders will require frequent syringing, and considerable quantities of water, and when each plant has got the desired number of pods set upon it, the point of each growth may be pinched out.

Vegetables for Pickling.—This month is the most favourable for getting together Cauliflowers, French Beans, Onions, Cucumbers, Radish-pods, Nasturtium seeds, &c., for pickling. Each item should be gathered in perfect condition.

Potatoes.—Such varieties as are ripe should be lifted, dried in the sun for an hour or two, and then placed in small lots together in the Potato cellar, being careful first to sort out every diseased tuber.

Digging and Trenching.—Manure and compost-heaps may now be got in readiness for wheeling on to the vacant plots, if the land is of a heavy description, digging it early in the autumn; and with such land it is necessary to ridge it or leave it in a rough state. Those who trenched and dug deep last autumn and winter will find their crops suffer but little from the lack of rain this dry summer. Light land is not benefitted to the same extent by early digging, unless it is trenched.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Raspberries.—The whole of last year's canes of summer-fruited varieties may now be removed, so as to admit sunlight to the new ones. All weak canes of the current year may likewise be removed, only sufficient strong canes being left for next year's fruiting, or for making new plantations if these are contemplated. Mulching materials may be removed at the same time on cold soils and districts, and the surface stirred with the Dutch-hoe. It is not desirable to fasten the young canes that are left, provided they do not chafe against the supports; and if tying has to be done, the canes should be fastened singly to the wires. Weak plantations may be strengthened by applying firm-yard-drainings once a week till the middle of September, supplementing these with clear water.

Apples and Pears.—If any variety of fruit is required for exhibition or other special purpose, the trees should be assisted with liquid-manure, diluted in safe proportions according to strength, drainings from the farmyard or cow-shed, applying it at weekly or longer intervals. Liquid-manures made by soaking manure and soot in a tub of water require much care in their application, the soil being apt to get clogged with the solid matter contained in the mixture if the liquid be not quite clear, and nitrification is prevented. The ground over the roots for as wide a space as the application reached should always be moved with the hoe two days after the application, in order to check evaporation, and keep the soil in a healthy condition. Any leaves that shade the fruits must be removed, and injury by the birds must be prevented by covering the trees with netting; tits and blackbirds are the worst offenders, and once they get a taste, it is a difficult matter to keep them away from the trees.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Cattleyas and Lælias.—Some of the more forward plants of *Cattleya Trianaei* and *C. Percivaliana* will have completed the current season's pseudo-bulbs, requiring as a consequence rather less water at the root, and to be gradually exposed to more sunlight and ventilation. The compost of those plants whose growth is partially made, should be kept fairly moist, and be allowed to get dryish before water is afforded. Plants of *C. Mendeli* require the same kind of treatment; and those of *C. Mossiae* that are not yet showing their flower-sheaths should be carefully afforded water, the young growths being prone to decay; but when the flower-sheaths appear, the quantity of water may be considerably increased. *C. Schroderae* should be treated similarly; and *C. Bowringiana* will also require plenty of root-moisture till the new pseudo-bulbs are finished. Our plant of *C. Lawrenceana* has made some progress, and the plant is raised well up to the roof, but not exposed to strong sunshine. Until the flower-sheaths show, water must be afforded with discretion, gradually increasing the amount with the advance of the growth. Plants of *Lælia purpurata*, and the hybrids, *C. exoniensis*, *C. fausta*, *C. Lord Rothschild*, *C. Harrisii*, *C. Parthenia*, *C. Pheidona*, *C. Wendlandiana*, *C. Mantini*, *Lælio-Cattleya Canhamiana*, *L.-C. Wellsiana*, *L.-C. Eudora*, *L.-C. Pallas*, *L.-C. Nysa*, *L.-C. callistoglossa*, *L.-C. eximia*, *L.-C. Philbrickiana*, *L.-C. Phoebe*, *L.-C. Henry Greenwood*, *L.-C. Lady Wigan*, *L.-C. Amesiana*, &c., being in various stages of growth, must be treated each according to its needs. As the new growths of these plants approach maturity, gradually inure the plants to fullest light and more air. *Lælia pumila* and its varieties, *praestans*, *Dayana*, and *marginata*, being now in full growth, will need copious supplies of water when the compost gets thoroughly dry. These species are most thrifty when hung in a light position in the intermediate-house. The pretty hybrid, *L.-C. Blessensis*, an offspring from *L. pumila* and *C. Loddigesii*, and the rare *Sophro-Cattleya Calypso* also thrive most satisfactorily in a cool, intermediate-house temperature. *C. aurea* and its variety, *chrysotoma*, without doubt the handsomest Orchid at present in flower, should have the water-supply at the root gradually reduced as soon as the flowers open. For a few weeks the plants should be kept on the dry-side; the result of keeping the compost moist at this period is, that the roots do not sufficiently assist the plant to regain its vigour after flowering. The same kind of treatment is necessary for *C. Gaskelliana* and *C. Rex*, which are now in bloom. The autumn-flowering *C. labiata*, now in full growth, and showing its flower-sheaths, will need to be kept fairly moist at the root till the flowers open, when the supply must be lessened by degrees. *C. gigas*, *C. Warneri*, *Lælia tenebrosa*, and *L. cinnabarina*, now beginning to make roots freely, may be repotted or surfaced with fresh material. Plants of *Lælia anceps* and its numerous varieties showing flower-spikes, will need liberal treatment as regards light, sun-heat, and moisture, and the most favourable position should be allotted them in the Mexican or the *Cattleya*-house, slightly shading the plants overhead with tepid rain-water in the afternoon. The young growths are apt to topple over at this season, and it is prudent to support them with neat sticks. *Cattleya speciosissima* (*Luddeimanniana*), *Odontoglossum citreum*, and *Lælia rubescens*, should be grown under the conditions that suit *L. anceps*.

Pleiones will now require plenty of light, air, and water, till the foliage begins to change colour, when the compost should be kept merely moist. With the exception of *P. humilis*, *P. Hookeræ* and its variety, *brachyglossa*, all of the *Pleiones* thrive in a sunny corner of the *Cattleya*-house, and the species named are the better for being hung up near to the roof in the cool-house.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Vines and Vine-borders.—The renovation of the borders where Vines have shown signs of weakness from any cause must soon have attention, the old soil being replaced by new without the next year's crop being lost. It will take two years to complete the job if there be an inside and an outside border. The best time to commence the work is after the fruit is cut and the wood is ripe, and while the foliage is still green; and a beginning may be made forthwith if this season's crop of fruit is consumed. First, cart in or prepare the soil, the most suitable being middling heavy pasture loam, dug 4 to 6 inches thick; to this add one-eighth of mortar-rubble, chalk, plaster, &c., the light particles of which should be sifted out of it, and one-eighth charred soil, the whole being enriched with bone-meal at the rate of a quart to wheelbarrow load (1 cwt.) of soil. Very heavy loam may need a little more lime-rubble. If the vinery is a lean-to, begin taking out the soil next to the back wall, and continue working it out from between and beneath the roots till the front wall is reached, always guarding against damaging the roots with the digging-fork. Having done this, and wrapped the roots up with mats or litter, take out the drainage, and sweep the concrete at the bottom of border clean. The total depth of a border should not exceed 3½ feet, nor the drainage be more than 1½ feet deep. Should the border have been deeper, fill up with more drainage-materials rather than increase the depth of the soil, but should it have been shallower, decrease the depth of soil, and afford good drainage, this being very essential. Suitable materials for drainage consist of brickbats, sandstone, limestone, or even chalk, as this is not disintegrated if the frost cannot reach it. These things should be placed evenly by hand on those the next size, and the smaller on the top on the concrete floor, the bigger pieces at the bottom. The whole may be covered with a layer of sods placed close together, with the grass downwards. Then proceed to fill in the soil the full length of the vinery, making a bank 5 or 6 feet wide, building up sods in regular courses at the outside, so as to form a wall. When the filling-in is brought to within 6 inches of the surface, lay the Vine-roots in the soil at various levels, at the same time cutting back damaged roots to sound wood, making the soil firm about them, and afterwards afford water copiously, so as to moisten the whole mass of soil. The whole work should be done expeditiously, and the Vines shaded for a time with hothouse shading or by whitening the roof-glass, and in bright weather moisten the leaves twice a day, and ventilate sparingly, and only on the top of the house, keeping the ventilators a little bit open throughout the night. By taking care of the foliage, the roots will be induced to move, and establishment will partially take place before the winter. The present is a suitable time to cart in soil for use during the coming season, and a calculation should be made of the quantity and kinds required for Vine-borders, for Pines, Peach-borders, Cucumbers, Melons, &c.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Euphorbias (Poinsettias).—Any later plants of *E. pulcherrima* not yet finally potted should receive attention without delay, and it may also be necessary to afford a shift to larger pots of those plants in 5 or 6-inch ones, which are making vigorous growth and are already furnished with plenty of roots, the doing this tending to keep the growth vigorous and the bottom leaves from becoming yellow and falling off. Plenty of air should be afforded the plants, and shaded also, during the hottest part of the day; syringing them freely morning and afternoon, leaving a small amount of ventilation throughout the night. Manure-water, varied by an occasional application of clear soot-water, may be afforded plants well rooted, but not recently repotted.

Codiaeums (Crotons).—Brightly coloured shoots should now be plentiful on old plants which were beheaded some time ago, and if these are made into cuttings and inserted singly in thumb-pots and placed in a strong moist heat, closely shaded from the sun, to strike, useful plants fit for table decorations will be available in the autumn and winter. *Codiaeums* should, as cuttings, not be allowed to flag, and should be kept erect by securing them to small sticks, and be kept close under a bell-glass or hand-glass covering several cutting-pots. The bottom-heat applied should not be less than 85°, and the soil with which the pots are filled should consist of loam ¾, sharp sand ¼, with a surfacing of clean sand. Any plants which appear to need repotting in order to keep them growing throughout the winter, may now receive attention. *Codiaeums* should be placed close to the light, fully exposed to the sun, in order to bring out the brightest tints the leaves are capable of. The syringe should be freely used three or four times a day in hot weather. The plants must be grown hot and moist, and batches of cuttings of *Oplismenus Burmanni* (*Panicum*) *variegatum* may be struck. They come in useful for many varied purposes.

Chinese Primulas.—Successional plants may be repotted directly they have filled their pots with roots; and earlier batches, if growing freely, may receive weak manure-water on alternate waterings. Plenty of air and light are needed by these plants, care being taken to shade them from direct sunshine, and to afford them ample space and a cool bottom on which to stand the pots.

Freessias.—Home-grown bulbs should be sorted, and the best of them potted to the number of ten to twelve together, in 5 or 6-inch pots; the weaker ones may be placed thickly together in boxes, and both be put into cold-frames until growth begins, when they should be removed to slightly less cool quarters, and eventually to gently force them into early flowering.

Pilea muscosa.—Cuttings of this plant may be struck in small pots for winter and spring decoration. The cuttings will strike readily in a close, warm frame.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

Olearia Haasti.—We have in this New Zealand evergreen plant an ornamental evergreen flowering shrub of much usefulness when it becomes a dense mass of white flowers. As a front-row plant in shrubberies, or as a clump on the turf, its effect is striking. It is likewise unaffected by a moderate amount of shade, and is therefore fit for planting under trees, and its flowering is then not so abundant; but the foliage, which is small and neat, and of a dark-green tint, makes it a very desirable plant in such situations.

General Remarks.—Most of the bedding-plants being now at their best, notes should be made of desirable alterations and re-arrangements in colour and material another year. Doing this now will admit of the gardener making his propagating arrangements more in accordance with requirements than when these are of a haphazard nature. The same applies to the re-arrangement and replanting of shrubberies, and of young trees; attention being given more particularly to the harmony or the contrast of the various tints of the foliage, and the forms of the shrubs and trees. Notes may be taken of shrubs which it may be desirable to buy, and a day during the next few weeks may be profitably spent in looking over the stores of a good hardy plant nursery. Where in the shrubberies overcrowding of the shrubs has begun, the present season may be utilised in marking those which will have to be removed—a method that saves much time later on. Flower-beds and flower-borders, herbaceous or other, will demand, whilst the hot weather lasts, and failing thunderstorms, copious, if not frequent, applications of water; and where desirable, as, for instance, round Dahlias, Hollyhocks, Michaelmas Daisies, and other strong-growing plants, a mulch of manure hidden under a sprinkling of earth may be applied. Great neatness and cleanliness ought to prevail everywhere, and spent flowers, dead leaves, and seed-vessels should not be tolerated on any plant. Let attention be paid to those subjects that will be employed in the spring flower-beds, in order to have strong, well-rooted plants. In some cases the points of the leading shoots may be once pinched off, and this is particularly useful in giving bushiness to Wallflowers. Antirrhinums, *Alyssum maritimum*, and plants of like habit.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, AUG. 23 { Royal Horticultural Society's Committee.

SHOWS.

TUESDAY, AUG. 23 { Brighton and Sussex Horticultural Society's Show (2 days).

WEDNESDAY, AUG. 24 { Harpenden Horticultural Society's Show.

THURSDAY, AUG. 25 { Ayrshire Horticultural and Agricultural Society's Show, at Ayr.
Swansea Horticultural Show.
Boston Horticultural Show.
Ellesmere Floral and Horticultural Society's Exhibition.

FRIDAY, AUG. 26 { Royal Horticultural Society of Ireland, Exhibition.

SATURDAY, AUG. 27 { Worsley Horticultural Society's Show.

SALES.

MONDAY, AUG. 22 { Great Trade Sale of Dutch Bulbs, 3500 lots; also Roman Hyacinths, Daffodils, Snowdrops, Lillium candidum, &c., at Protheroe & Morris' Rooms.

THURSDAY, AUG. 25 { Great Trade Sale of Dutch Bulbs, 2000 lots; also over 200,000 Kentia and other Palm Seeds, at Protheroe & Morris' Rooms.

FRIDAY, AUG. 26 { Orchids, at Protheroe & Morris' Rooms, by order of Mr. F. Sander.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—61° 2'.

ACTUAL TEMPERATURES:—

LONDON.—August 17 (6 P.M.): Max., 77°; Min., 60°.

PROVINCES.—August 17 (6 P.M.): Max., 78°; London; Min., 57°, Shetland.

The National Co-operative Festival. THE "One and All" flower show will be held this year in the Centre Nave of the Crystal Palace.

It is intended more especially for the exhibition of flowers, fruit, and vegetables raised by "co-operators" and allotment-holders, and does a great work in promoting horticulture among the people. It will be opened for private view about 2 o'clock in the afternoon of Friday, the 19th. At half-past 3 there will be a gathering of members and friends in the Summer Dining Saloon, which is situated in the southern annexe in the approach from the Brighton Station to the Palace. Here the guests will be received by Earl GREY, K.G., accompanied by the Countess, and their daughter, Lady VICTORIA GREY. An address is expected from Earl GREY, who has taken a foremost part in pressing forward the most advanced and beneficial developments of the Co-operative movement. Years ago, when he was well known as Mr. ALBERT GREY, his article in the Royal Agricultural Society's *Journal*, detailing his co-operative agricultural experiments at Howick, excited the deepest interest. Since he returned from Rhodesia he has renewed his public efforts for Co-operation of the best type, and what he may say on the 19th and 20th at the Crystal Palace will be anticipated with much interest.

The "One and All" Flower Show will be opened by the Earl, accompanied by the Countess, and their daughter, the Lady VICTORIA GREY, who also gives a Challenge Shield to the Co-operative Choir to whom is

assigned the first place in the Choral Competitions. The Countess GREY also gives a Challenge Cup to the Co-operative Society that obtains the greatest number of first prizes. The Cup or Shield respectively becomes the property of the Society retaining possession for three successive years.

In addition, the Council of the Agricultural and Horticultural Association, Limited, gives a "Champion Gold Medal" to the most successful exhibitor, subject to a scale of points and rules prescribed. Over and above these medals and special awards, the Council of the Agricultural and Horticultural Association gives money prizes to the aggregate amount of £350.

By way of illustrating the extent of this show we may say that the two classes for Vegetable Marrows in this section comprise more than 50 entries in each class; there are over 175 entries for the four classes of Potatoes, the other entries of vegetables being in equally remarkable proportions. But in addition to the large entries for the commoner kinds of vegetables usually grown by workingmen, the entries in the classes for the choicer vegetables usually grown by well-to-do amateurs and professional gardeners, such as Tomatos, Celery, and Cucumbers, are remarkably well filled, and the interesting comparison between the produce of these simple amateurs and the better equipped gardeners of the second section of the show has by no means in previous exhibitions always been to the advantage of the latter.

The position attained by the "One and All" Flower Show as the leading annual event of its kind, not only in the United Kingdom but in the world, was well maintained last year when 34,695 visitors attended the show, which comprised over 4000 exhibits, extending nearly a mile in length. The show last year, owing to the Jubilee Exhibition occupying the centre of the Palace, was held in a gigantic tent on the great terrace in front of the Crystal Palace, and the vast dimensions of this canvas structure were very striking. This year the show will again be housed under the glass of the Palace, and from the entries already received it will probably occupy the whole length of the great building.

This Great National Co-operative Festival and "One and All" Flower Show hold the same relation to the Agricultural and Horticultural Association as the Royal Agricultural Show holds to the Royal Agricultural Society. It affords an annual opportunity of demonstrating some of the results of the year's work. An exhibition of thousands of specimens of flowers, fruit and vegetables, grown in all parts of the kingdom, under every sort and condition of soil, climate and treatment, by independent cultivators, each working in his own way, counts for much in public estimation, and cannot fail to be highly educational and useful.

Next week we shall give a general account of the show in its leading features. To attempt anything like a detailed report would be futile, from the vast number of similar exhibits, neither would it be desirable if we could do it. Horticulture is not the only attraction offered, for we learn that the great orchestra will be filled by at least 6000 choristers, and there will also be a collection of photographs of gardens. Indeed, every inducement is held out to spend a useful and a happy day.

PROUSTIA PYRIFOLIA.—Recently Mr. LYNCH, of the Cambridge Botanic Garden, sent us magnificent specimens of this Chilean Composite. Our

space is by no means adequate to do justice to the beauty of the plant. The plant belongs to the curious group of the Mutisiæ, in which the petals are distinctly three in number, instead of five united together, as in most Composites. The stems are downy, and provided with small spines. The leaves are ovate, rather thick, and finely serrulate, in some specimens deeply so. The flower-heads (fig. 36) are very numerous, densely crowded in terminal panicles, the flowers pale lilac, and the pappus deep rosy-lilac. The plant was originally described in the *Annales du Muséum (Paris)*, xix., t. 4, 1812, by A. P. DE CANDOLLE and is rather variable. The figure in the *Botanical Magazine*, t. 5489, by no means does it justice. It was introduced from Chile by Messrs. VEITCH.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, August 23, in the Drill Hall, James Street, Westminster, at 1.5 P.M. At 3 o'clock a lecture on "Perpetual Fruiting Strawberries" will be given by M. HENRY DE VILMORIN.

HUNTERCOMBE MANOR.—The August number of the *Pall Mall Magazine* contains an account of this Jacobean mansion, with some very beautiful illustrations of the garden, the description of which was so familiar to the readers of our columns some ten or more years ago. The quaint and original descriptions were so much appreciated that they were gathered together into a book, the very title of which is tempting, *Days and Hours in a Garden*. The article in the *Pall Mall Magazine* says of it, "In the season of Violets a stranger entering would say it is a Violet garden. A little later on, it is all Daffodils, with a sprinkling of angel's tears. Later still, a garden of Primroses, lit up with 'many-coloured Tulips bright.' Then it is flooded with the amber of Wallflowers or the scarlet of Anemones. All May it is a realm of Iris, supreme in rainbow hues of gold and lilac; while in 'Royal June' it is as a page from the Rose-garden of Sâdi." Whoso desires to know the genesis and the evolution of this garden should read the sympathetic article in the *Pall Mall Magazine*.

THE CURATOR'S NEW OFFICE AT KEW.—The new office for the Curator, just off Kew Green on the Richmond Road, has an historic interest, in having been the residence of AITON, the author of the *Hortus Kewensis*. The Garden Library and the residence of Mr. W. WATSON are in this building.

PUBLIC PARK, WIDNES.—The 1st prize of 35 guineas in the public competition for the best design for laying out the Appleton House Estate as a public park has been awarded to Messrs. BARRON & SON, Elvaston Nurseries, Borrowash. The area of the Park is about 36 acres, and in addition to the general plan, which contains a lake, cricket and recreation-grounds, lawn-tennis ground, bowling-green, gymnasium, &c., they also furnish three alternative plans for dealing with Appleton House and premises; also designs for entrances, gates, band-stands, shelters, fountain, &c.

ITALIAN NATIONAL CHRYSANTHEMUM SOCIETY.—We have just received the first number of this new Society's *Journal*, and it is interesting to notice how all these continental Chrysanthemum societies are issuing periodical publications, in which their work is officially recorded. The President of the Society is Mr. A. SCALARANDIS, gardener to the King of Italy, a somewhat recent but nevertheless successful Chrysanthemum grower, who has met with important recognition both in Belgium and in France. The secretary, Mr. PAOLO RADARLI, is also a cultivator of repute, and amongst the members who already muster 160, we find names of well-known authorities and admirers of various nationalities. The Italian National Chrysanthemum Society intends to hold a show at Milan next autumn, and with such adherents as the gentlemen already named, Mr. Briccoe-Ironsidee, Dr. Baragiola, M. Calvat, M. Cordonnier, M. Rozain-Boucharlat, and several others, there should be such a display at Milan as would justify the hope that a large accession to the list of member-ship will take place.

SPORT IN CARNATION.—Mr. HERRIN obligingly sends us a flower of a Clove Carnation, the secondary bud of which, proceeding from the same stalk, is of a pale rosy-lilac self colour. This is only a case of a little less colour than usual, but the why eludes us.

not dispute their verdict; we agree with it. But of all persons in the world few require to exercise, and few do exercise, more foresight than do gardeners. Who can tell what Messrs. VEITCH may have in store for us if they continue intercrossing, possibly some-

hood could be infused into these crassulas, and among the multitude of seedlings there are sure to be some more hardy than others. Meantime the flowers of the hybrid are curiously intermediate in colour, form, and size, between those of the parents. Crassula



FIG. 37.—*PROUSTIA PYRIFOLIA*, D.C.: FLOWERS PAPPUS; FLOWER-HEADS MAGN. 2 DIAM., AND POLLEN GRAINS 300 DIAM. COLOUR ROSY-LILAC. (SEE P. 142.)

HYBRID BETWEEN CRASSULA COCCINEA AND ROCHEA FALCATA.—It is quite possible that many may have considered the hybrid shown by Messrs. VEITCH & SONS on Tuesday in last week, as less attractive as a garden plant than either of its parents. We shall

thing better than anything we have yet seen in this way, and therefore hybridisers and crossers who are necessarily doomed to so many disappointments at first should be strenuously backed up by their brethren. It would be a good thing if a greater degree of hardi-

coccinea has elongated flowers, with narrow lanceolate sepals, rich carmine petals, and the stamens more or less in union with, or at any rate, closely appressed to, the petals. The flowers of *Rochea falcata* are not much more than half the size of the *Crassula*, crimson-

yellow, with short ovate ciliate sepals, and stamens alternate with the petals, and almost free at the base. In the hybrid the flowers are intermediate in size, the sepals are more like those of the *Rochea*, as also the arrangement of the stamens. The anthers are shrivelled, and contain little pollen.

LYONS HORTICULTURAL EXHIBITION.—The syndicate of Lyons nurserymen some time ago announced that, on the occasion of the International Horticultural Exhibition, to be held at Lyons on Sept. 1, a grand horticultural fête should also be held. In 1894 a similar fête was highly successful, and 400 nurserymen from all parts of Europe were gathered in the fine Monnier rooms. The fête this year is to be held in the same saloons, which are large and handsomely decorated; and among the attractions offered is one to which attention is particularly called. The syndicate has procured the portrait or photograph of almost every one of those not now living whose name is famous in horticultural circles, and these photographs, enlarged by photography, will be on view to all the visitors. In organising this fête the *Chambre Syndicale* is guided by a graceful idea. It desires to make known to the present generation of horticulturists the form and features of their predecessors to whom the present celebrated establishments owe their reputation, and who have created horticultural science as much by their labours as by their writings. M. PERNET-DUCHER, 114, Route Henrioux, Lyon-Monplaisir, is the secretary.

SWISS NATIONAL CHRYSANTHEMUM SOCIETY.—We have just received the rules of this newly-formed Society, together with a schedule of prizes for the exhibition to be held at Geneva next November. We gather that its scope is on somewhat similar lines to the national societies of France and Italy, which may be briefly summed up as follows:—To encourage and develop the culture of the Chrysanthemum by every means in its power. 1, By organising shows; 2, By awarding medals or subsidies; 3, By awarding Certificates of Merit to the best novelties exhibited; 4, By arranging conferences at shows; 5, By giving advice to other societies desirous of holding Chrysanthemum shows and preparing prize schedules; 6, By supplying information to members, whether in Switzerland or abroad; and 7, By assisting amateurs to make selections of the best varieties to grow. The annual subscription is 5 francs for ordinary members, and 10 francs for honorary members. There is also a grade of corresponding members, and those elected as such will be entitled to admission to the Society's shows, and to receive its publications. Early in every year a journal is to be published containing a report of the progress of the Society, and a balance-sheet. A catalogue of the best varieties exhibited during the previous autumn will also be given. Part of the journal will be reserved for the publication of articles on the cultivation of the Chrysanthemum. The show will not be an international one except so far as new seedlings are concerned, and in this class exhibits from English raisers will be warmly welcomed.

INTERVIEWS.—We copy the following relating to fruit culture from the columns of the *Cable*. Mr. THOMAS WILLISHER, a Sussex farmer, consented to be cross-examined as to his farming ventures, and this is what he says about fruit:—"You seem likely to have fine crops of Apples and Plums?" "The Apples promise fairly well. They are the most important fruit I grow. The two chief varieties are the Wellington and the Glory of Hants; but I also grow Stone's Apple, Warner's King, Winter Queening, and Northern Greening. As to price, if the crops are good, Apples are cheap; if not, you can get an increased price." "Have you any difficulty about a market?" "No, they are sold in Hastings and London." "What is your number of Apple trees?" "I have 1500 Apple trees, 1000 Gooseberry bushes, 1000 each of black and red Currant bushes, 1000 Plum and Damson trees, and 500 Nut trees, Filberts and Kentish Cobs." "Any Strawberries?" "Only sufficient for use; they do not grow well on my soil." "Which fruit do you find the most profitable?" "Black Currants; the price in the market is 15s. or

16s. a bushel. For red Currants, I only get 7s. or 8s." "Which Plums do you find the most productive?" "The Victoria; I practically confine myself to that sort. The price for Plums, as of Apples, depends upon the crops." "Have you had any training as a fruit-grower, Mr. WILLISHER?" "None whatever. I took to fruit-growing because of the fall of prices in 1880. It was essential to do something else than ordinary farming. I commenced with fruit in a very small way, and it has gradually crept on."

A NEW CHRYSANTHEMUM CATALOGUE.—Mr. O. DE MEULENAERE acts the part of recorder of all the new Chrysanthemums for his countrymen in Belgium, having already published several very exhaustive and descriptive lists of novelties in years gone by. His last labours in this direction have resulted in the publication under the auspices of the Royal Agricultural and Botanical Society of Ghent of a third supplement to his descriptive list of Chrysanthemums. This new publication contains the novelties from all sources for the years 1896-1898, with the usual accompaniment of raisers' names, dates, section, and description, so far as the same are capable of being ascertained. Altogether, the work runs into thirty-six pages, and forms a useful work of reference to those whom it concerns. The publisher is M. AD. HOST, of Ghent.

POTATOS.—The production of Potatoes within the old tubers is not of very infrequent occurrence. It has often been described and figured in these columns, and is treated of from a physiological and morphological point of view by Mr. RENDLE in the *Journal of Botany* for 1893. Mr. NEWSTEAD of the Chester Museum now sends us some examples of a different but similar nature. The new tubers in this case are not formed within the old tuber, and liberated by the cracking of the latter, but a mass of densely aggregated buds or shoots is produced, forming an entangled nest-like mass, representing, we presume, the old tuber in a very modified form. The constituent shoots do not greatly lengthen or dilate, with the exception of one which turns downwards and forms a tuber of the ordinary character, its food having been obtained from the other shoots.

PUBLICATIONS RECEIVED.—*The Orchid Review* for August, No. 68, vol. vi. — *Journal of the Society of Arts*, August 5 and August 12, containing Cantor Lectures on Sources of Commercial India Rubber, 1 and 2, by Dr. D. Morris. — *Bulletin of Miscellaneous Information*, Royal Gardens, Kew, July, contains: Diagnoses Africanae XI, Fiji India Rubber, San José Scale and Chilliies. — *A Year's Work on a Kentish Fruit Farm*, by a Practical Man (Maidstone, Geo. Bunyard & Co.). — *Bulletin of Miscellaneous Information*, Royal Botanic Gardens, Trinidad, July, contents: conspectus, Ferns and Fern-allies; Cyatheaceae: Alsophila, Hemitelia, Cyathea. — *Bulletins of the Botanical Department*, Jamaica, for February and for March. The former includes papers on Cocoa in Trinidad, Venezuela and Grenada; Rubber; Ceara Rubber; Wax Palms of the Andes; Oka of Peru; Coccidae, and Synoptical list of Ferns; the latter Bulletin: Agricultural Chemistry of Cocoa and Elementary Notes on Jamaica Plants. — *Annual Report on Government Gardens and Parks in Mysore*, 1896-97. "The year was one of steady progress, and the public gardens and parks maintained their attractiveness. But owing to the dry weather which prevailed during a part of the year, the water supply was affected to a large extent, the Mango and other fruit crops were mostly a failure, and the trees and plants also suffered, though not very seriously." — *Contributions to the Flora of Queensland*, by F. Manson Bailey. Botany (Fungi); extracted from the *Queensland Agricultural Journal*, vol. ii., Part 1. — *Queensland Agricultural Journal*, June, containing many papers and Notes on crops, dairy, poultry, forestry, and allied industries. — *Agricultural Journal*, Cape of Good Hope, July 7, dealing with agriculture, stock, entomology, &c. — *Agricultural Gazette of New South Wales*, May; with papers on the Growth of Gall-making Insects, Report on the 1898 Vintage, Bees, *Paspalum dilatatum*, San José Scale, and other subjects. —

The Periodical Cicada (C. septemdecem), by C. L. Marlatt (U.S. Department of Agriculture). — *Report of the Botanical Department of the State Agricultural College*, Michigan, by W. J. Beal. An interesting record. Among the principal studies undertaken in the year (ending June 30, 1897), was that of Mushrooms and Toadstools; of which "many tons of good food, as valuable as beefsteak, go to waste in this State, simply from a lack of knowledge to enable the farmer and others to distinguish the edible from the poisonous. — From the Experiment Station of the same College come also Bulletins:— 1, *Study of Beans and Peas before and after Sprouting*, W. J. Beal; 2, *Study of Wheat and Buckwheat before and after Sprouting*, W. J. Beal; 3, *Study of Seeds of Timothy and Red Clover before and after Sprouting*, W. J. Beal; and 4, *Observations on the Leaves of Clovers at Different Times of Day*, W. J. Beal. — *The Fern Bulletin*, July (Midsummer Number), edited by W. N. Clute. — *Proceedings of the Twenty-fifth Session of the American Pomological Society*, held September 1 and 2, 1897, Columbus, Ohio. — *Bulletin de la Société Botanique de France* (Paris), July. — *Revue Mensuelle de Bibliographie Scientifique* (Paris), August. — *Bollettino della R. Società Toscana di Orticultura*, Luglio, 1898. — *Verzeichniss der Mitglieder des Vereins zur Beförderung des Gartenbaues in den Preussischen Staaten*, 1891. — *Botanisches Centralblatt*, Nos. 30 to 31. — *Rheinische Gärten: Das Heidelberger Schloss und seine Gärten*, Von H. R. Jung and W. Schroder (Berlin). — *Die Alpen—Pflanzen in der Gartenkultur der Tiefländer*, Von Erich Wocke (Berlin). — *Ueber die Bedeutung und den Ursprung der Paracorolle der Narcisseen*, Von Ladislaus J. Celakovsky.

PLANT PORTRAITS.

CYPRIPEDIUM HYBRIDS, one between *C. Spicerianum* and *C. villosum*, and the other from *C. insignis*. *Wiener Illustrierte Garten Zeitung*, July.

HABENARIA BLEPHAROGLOTTIS, *Meehans' Monthly*, August.

IRIS AITCHISONI, *Garden*, August 6.

IRIS ENSATA, Thunberg, var. *PADULARIA*, Naudin. — A pretty rhizomatous Iris, the foliage of which is adapted for forage. *Garten Flora*, July 15.

PHLOX DIVARICATA (= CANADENSIS), *Moniteur d'Horticulture*, August 10.

STRAWBERRY PRINCESS CLEMENTINE. — This may be called a Royal Sovereign Strawberry, as it was raised in the private gardens of the King of the Belgians at Tervueren. It is a cross between Louis Vilmorin and Sharpless. It is early, rounded or wedge-shaped. *Bulletin d'Agriculture*, &c., July, 1898.

TRITOMA CROCAT, *Garden*, July 30.

LAW NOTES.

RE SAMUEL RYDER, JUN.

THE above-named debtor made an application for his discharge at the London Bankruptcy Court, before Mr. Registrar Linklater, on Thursday last. It appeared from the Official Receiver's report that the proofs actually admitted amounted to £3420 6s. 6d., and the assets, so far as they were not assigned to creditors, amounted to £2645 0s. 5d., according to the debtor's statement of affairs, but the trustee reported that they had only realised £503 4s. 9d. A first and final dividend of 1s. 5d. in the pound had been paid on proofs amounting to £3420 6s. 6d. The Official Receiver submitted that the debtor's failure was at least in part due to his taking over a struggling business in Manchester, which he, an auctioneer in London, was unable to properly supervise. The bankrupt's assets were not equal to 10s. in the pound on his unsecured liabilities.

Mr. Carrington submitted that it was a case in which the failure had been caused through no fault on the part of the debtor, but the Registrar suspended the discharge for two years, that being the minimum period allowed by the Act when 10s. in the pound is not paid to the creditors.

Re EDGAR HARRY LAWTON.

The public examination of this debtor was held at the London Bankruptcy Court on the 11th inst., before Mr. Registrar Linklater. The summary of accounts showed gross liabilities amounting to

187 6s., of which £1418 17s. 6d. was due to unsecured creditors. In April, 1896, he entered into agreement with another person, who had a nursery Brighton, for the purpose of growing Orchids. It was arranged that the profits were to be equally divided, but in the September following the stock, &c., was sold to a company, called the Brighton and Worthing Horticultural Co., Ltd., which was formed to take over the stock and another business at Worthing. The bankrupt received as consideration 1233 fully paid shares as vendor, and he had since acted as director of the company without remuneration. He alleged his failure to have been caused through bad debts, and the adverse result of an action brought against him by the petitioning creditor. He had kept the usual books of accounts. The partly secured creditors held shares as security against an advance. The debtor was eventually allowed to pass his examination.

ALLEGED NOXIOUS FUMES.

Messrs. Jefford v. Goodall & Son.—The plaintiff in this action, Charles Jefford, of High Street, Bracebridge, sued Messrs. Goodall & Son, of Bracebridge, at the last sitting of the Lincoln County Court, before his honour, Judge Shortt, to recover the sum of £5 12s. in respect of damage caused to Potatoes and fruit-trees by the fumes from the defendant's works. The evidence was to the effect that the plaintiff owned a garden at the side of the defendant's manufactory, and for some years he had complained of a nuisance that had arisen, owing to the manufacture of asphalt. On June 25, on going into his garden, he found that his crop of Potatoes, &c., had been seriously injured. Mr. T. Jackson, of Beaconsfield Nursery, said he had been a market-gardener for upwards of fifty years. He inspected the plaintiff's garden a short time ago, and found everything in splendid condition. Eventually his Honour found for the plaintiff for 17s. 6d., but allowed no costs.

WORK ON "FORESTRY."—ACTION FOR THE LOSS OF A MANUSCRIPT.

At Leeds Assizes, on August 11, Mr. Justice Day and a special jury heard the case of *Simpson v. Bain*. In this case the plaintiff was John Simpson, head forester to the Earl of Wharfedale, Wortley, near Sheffield, who brought an action to recover damages for the loss of manuscript intended for the publication of a book, from James Arthur Bain, bookseller and printer, of Sheffield. Mr. Tindal Atkinson, Q.C., and Mr. Ringwood were counsel for the plaintiff; Mr. Chas. Mellor appeared for the defendant.

In opening the case, Mr. Atkinson said that the manuscript contained original matter, which was written by the plaintiff, who had had very considerable experience in horticulture, and had taken great interest in the art of forestry, which was much better known and practised abroad than in England. The subject, however, had recently engaged the attention of persons who were interested in the development of waste lands, and the plaintiff had written articles in connection with it. The art of forestry was practised largely in Germany, and the Germans had produced books on the subject. Plaintiff thought the opportunity would be a good one to write an English book on the subject, and he commenced to compose one of from 250 to 300 pages.

Mr. Mellor at this point intimated that the question would only be one of damages.

Mr. Atkinson, continuing, said that the plaintiff took the MS. to the defendant to be type-written, and it had to be returned to him. After the plaintiff had finished the MS. he wrapped it in a brown-paper parcel, and put an elastic band round it. The parcel contained chapters 9, 10, and 11 of the work. Plaintiff took the parcel to Sheffield, and handed it to the defendant in the Wharfedale Hotel, impressing upon him to be very careful with it, as he had no other copy, and it could not be replaced. Defendant promised to take proper care of the MS., and to return it safely. The parcel also contained an original pen and ink sketch of a forest near Newry, in the North of Ireland.

The MS. contained about 31,000 words. On re-

turning home the plaintiff made a memorandum that he had handed the MS. to the defendant to be type-written. Plaintiff's case was that these three chapters contained the pith and essence of the book, and that in losing them he lost all record of what he had written. The MS. and the type-written copy were to be returned about Christmas, and as they did not turn up, the plaintiff saw the defendant early in January, and asked him if the MS. had been lost, to which he replied in the negative.

Defendant told the plaintiff that he had sent the MS. to the Remington type-writing people, who had been very busy, and it had not been returned. On January 20 plaintiff wired for the return of the MS., and on the following day received a reply stating that it had been lost.

Plaintiff wrote in answer expressing his regret, and stating that the loss was irreparable. His client not being able to make good the loss, was compelled to bring this action to recover damages. The jury would only be called upon to assess the pecuniary value of the MS., which was original, and



FIG. 38. GOOSEBERRY DISEASE (ÆCIDIIUM GROSSULARIÆ): AFFECTED LEAVES AND FRUIT. (NAT. SIZE.)

had cost time and money, coupled with long experience, to prepare. Plaintiff had had to go to Germany to obtain information for his book, and had thus been put to considerable expense. Under the circumstances, he asked the jury to give the plaintiff very substantial damages. £100 and costs awarded.

THE GOOSEBERRY FUNGUS. (ÆCIDIIUM GROSSULARIÆ.)

SEE FIG. 38.

FEW plant diseases have proved more perplexing to mycologists within recent years than the *Æcidium* of the Gooseberry, a well-known object on the leaves and fruit in many parts of Britain. And yet now that its life-history is known, it seems almost surprising that its various spore forms remained undetected for so long. In Dr. Plowright's *British Uredineæ and Ustilagineæ*, 1889, p. 263, *Æcidium grossulariæ* is ranked among "Imperfect forms, the full life-history of which is unknown." And at that time practically nothing was known concerning it, although various attempts had hitherto been made to solve its life-history. Three or four years later, how-

ever, Dr. Klebahn, of Hamburg, had the good fortune to discover the missing spore forms, and succeeded in demonstrating that *Æ. grossulariæ* was a heteroecious species. By experimental culture he proved that the uredospores and teleutospores occur on two species of sedges, viz., *Carex acuta*, L., and *C. Goodenovii*, Gay, and that the fungus was nearly allied to *Puccinia caricis*, Schum. The fungus was also renamed and designated *Puccinia Pringsheimiana*, Klebahn.

During a visit to the Lake District in December, 1895, a uredine was found by the writer on the withered leaves of *Carex acuta*, and submitted to Dr. Klebahn, who recognised it as his *Puccinia Pringsheimiana*, and who produced from the material the aecidiospores on *Ribes grossularia* during the following spring.

With a view of studying the life history of the fungus at home, a series of cultures were arranged in 1897, and for this purpose ten small Gooseberry bushes (thanks to W. H. Stansfield, of Southport) were established in my garden during the winter, together with several plants of the common Nettle (*Urtica dioica*). In the month of April fragments of *Carex acuta* bearing teleutospores of the fungus were obtained from the shore of Windermere lake. On May 3 these were in an active state of germination, and were applied to the leaves of two Gooseberry plants and several Nettle plants, and were covered with bell-glasses. The remaining plants were kept as check plants in an isolated position. Spermatophytes were evident on both Gooseberry plants on May 28, and on June 6 the aecidiospores made an appearance. No result followed on the Nettles, and all the control-plants remained free throughout the season. On June 17 ripe aecidiospores were applied to the leaves of *Carex glauca*, but without any result.

At this stage the experiments were unfortunately interrupted through a tour abroad. The experiments, however, have been continued during the present year, and a number of plants of *Carex hirta*, L., *C. leporina*, L., and *C. Goodenovii*, Gay, were established both in pots and in the garden for the purpose. One-half the plants of each kind were kept as control-plants, and on May 31 to June 3, aecidiospores of the fungus—kindly forwarded from Windermere by my friend, Mr. C. Crossland—were profusely applied to the three sedges, which were in a thoroughly healthy condition, and each plant was covered by a bell-glass for several days. The first indication of a result was on June 12, when two or three leaves of *Carex Goodenovii* were observed to be showing discoloured spots on the upper surface. The following day a sorus of uredospores made its appearance, and on June 18 and 20 uredospores were abundant on the upper surface of the leaves of *Carex Goodenovii*. Not the slightest result followed on either *Carex hirta* or *Carex leporina*, and all the control-plants have remained free to this date. Teleutospores were evident on July 5. The fungus spreads rapidly by means of its uredospores; for instance, on June 22 germinating uredospores were applied to the three species of *Carex* above mentioned, and on July 1 had reproduced uredospores on *Carex Goodenovii*, but without result on either *Carex hirta* or *C. leporina*. This latter experiment has been several times repeated with precisely the same results. At the present time my *Carex Goodenovii* is invaded by a promising crop of teleutospores, and it is hoped next year to test the effect of the fungus on other species of *Ribes*. Of the many experiments with parasitic fungi few have given more pleasure to the writer than the working out of Dr. Klebahn's *Puccinia Pringsheimiana*. Henry T. Soppitt, 12, Glen View, Halifax, Yorks.

HOME CORRESPONDENCE.

WALNUTS: SHOWING HOW CUSTOM IN TRADE ALTERS.—In the fifties, the supply of Walnuts to Covent Garden Market came chiefly from abroad and many more came in the green shells than now. They arrived in upright, brown-rodded, round baskets with lid, and two handles at the top, and these were

called half-tun baskets—why, I do not know, as they held about 1 bushel; and when the Nuts were ripe enough, they would be shelled ready for sale by the peck or otherwise. As the season advanced, the Walnuts would at times come in a very dirty, black state, owing to the decay of the outer shell; and after removing the outer shell, it was necessary to cleanse them in a tub of water in which chloride of lime was mixed, and wash them with a stiff birch-broom or heather. On being taken out of the water they were allowed to drain dry before bleaching, and that was accomplished in what was called a colouring-tub, an upright vessel, made for the purpose, of nearly straight staves, tapering slightly upward, about 5 feet high, with a false wicker concave bottom fitted about 12 inches from the bottom of the tub, where a sort of pigeon hole was made in which to put the sulphur, for holding which a brown earthen pipkin was used; the sulphur being lit and placed within the tub under the Nuts, and a sack laid over the top. The sulphur was allowed to burn itself out before the sack was removed. The Nuts showed a marked improvement in appearance, and were then ready for sale. That was the custom with the merchants who dealt largely in them. The tubs would stand outside in front of the dealers' premises, and at times numbers of them would be in use at one and the same time, throwing off fumes to such an extent that it became a great nuisance to persons having business in the market, and complaints were made to the magistrate at Bow Street, and printed notices were served by the Market Superintendent on the tenants ordering the practice to be discontinued, which had the desired effect. Some of the market tenants then had kilns built in their cellars, with a pipe connecting with a flue to carry off the fumes. All that is now changed, and I doubt if any kilns now remain; and if anyone saw such a tub as described, they might wonder for what purpose it could be. Walnuts seldom come in the green shell; but very large quantities in bags, well sorted and well packed, in a uniform handy parcel, which command ready sales. T. P.

A ROYAL HORTICULTURAL SOCIETY PEAS TRIAL.—Mr. Dean suggests that any considerable Peas trial conducted by the Royal Horticultural Society, not only to test the merits of varieties innumerable, but also to determine which to recommend for farther culture, and which to advise for removal from the lists, should be made out in the breezy country air. That is most certainly an essential, not only because the soil at Chiswick is too light and porous, and readily dried, but also because the air there is too confined and superheated in warm weather. Much more room than can be there furnished is also needed. A good trial of diverse varieties, in rows of moderate length, would need fully an acre of ground, and one of diverse stocks of varieties would need 4 acres at least. Still, it is more good stocks of distinct varieties that it is desirable to test than diverse seedsmen's stocks of them. Certainly, it would be easy to obtain 200 that are claimed to be distinct. Such a trial would have to be on good Pea soil, not too remote from London. Possibly Mr. W. Poupart of Twickenham would be willing for due consideration to place an acre of his fine open land at the Council's disposal for the purpose. I had a very successful trial of twenty varieties on light sandy ground at Richmond, but at Twickenham the site is more open, and the ground more holding and deep. But were such a trial conducted, and a choice selection of the very best made and published, would seedsmen be prepared to act upon it? There would have to be determined beforehand by the selection committee certain conditions on which the selection should be based—hardiness, precocity, productiveness of pod and Pea, colour, sweetness, flavour, easiness to shell, and general taking appearance; also excellence for late cropping. Dwarfs, mediums, and tall, would have to be placed in their respective sections. Certainly a great and real trial of this nature should be full of exceeding interest, and have great value. A. D.

ROYAL SOVEREIGN STRAWBERRY.—It has been this season a subject of common complaint against this Strawberry that because of its long leaf-stalks the foliage overhangs the fruit as it ripens, excludes light and air, and thus causes it to rapidly decay. When looking over the breadth in the gardens at Ruxley Lodge, Esher, recently, Mr. Miller referred to this complaint, and said when he found the ripe fruits suffering from damp he had some long straight sticks pushed in under the stems, and then lifting them a few inches and fixing them on the

props, so brought the fruit up to the light and air that decay was at once checked. Could not this plan be adopted earlier, using either Bean rods or long Bamboo rods, a couple of wire ties being attached to each, so that they could be lifted from the ground a few inches, and be suspended to other rods, running along 12 inches above the plants? That would bring the fruits up to the light, would keep them clean and dry, and would also place them out of the reach of vermin. A. D.

FLORIDA VELVET BEAN.—The Director of the Florida Agricultural Experiment Station, in his *Bulletin* 43 for Sept., 1897, on p. 637, gives the name of this Bean as above instead of *Mucuna pruriens*, as given in a recent issue of the *Gardeners' Chronicle*, and speaks of it as follows:—"Another legume that has lately come into prominence, and that promises to be a valuable agent in reclaiming the worn-out soils of Florida, and also a most excellent food for stock, is the Velvet Bean. During the past two years this station has been conducting experiments with this plant, and the results have been very promising. It is now known that the plant will grow luxuriantly all over the State, and stock of all kinds are exceedingly fond of it. The practical results of feeding have been all that could be desired, and we believe it to be equal to the best legumes in feeding value. In the near future it is proposed to make a complete chemical study of this plant in different stages of growth, and to publish the information for the benefit of farmers. There is scarcely a doubt that it will yet play an important part, not only in solving the forage problem in Florida, but in improving both the mechanical condition and productive capacity of our thin sandy lands, by increasing their stores of both nitrogen and humus, and exerting various other beneficial effects." The present retail price of the Beans is about 2½ dols. per bushel. W. E. G.

WHAT IS HABENARIA CONOPSEA?—In answer to this editorial question, which is asked on p. 126, may I be allowed to say that I do my best loyally to follow the most recent botanical authority for the names of the plants I mention, and have been told at Kew to believe in *Index Kewensis*, and the *Kew Hand-List of Hardy Plants*? Where these two agree the name is to be considered final, but where they differ preference is to be given to the last as more recent. The two works agree in giving to the native plant generally known as the Gnat, or fragrant Orchis, the botanical name of *Habenaria conopsea*. Fifty years ago *Gymnadenia* was its prevalent generic name, and since that time British and continental botanists seem to have held various opinions about its right to each name. With regard to the hybrid in question I have leave to say that the finder of the three specimens I mentioned is Col. George Dixon, of Astle Hall, near Chelford, and that if any botanist should next year be visiting the neighbourhood of Arisaig, Col. Dixon will instruct him where to look for it. The spot is near a house called Garrowmore, about three miles to the north of Arisaig, very near the line of railway now being made from Fort William to Maleg, which will be open in two or three years, and give better access to that wild and beautiful district. C. Wolley Dod, Llandudno.

A NEW BRITISH ORCHID.—In connection with the notes on the above at pp. 61 and 126, it will be interesting to reproduce an article by Mr. Rolfe which appeared at p. 328 of the last number of the *Orchid Review*. *Habenaria conopsea*, it will appear, is another name for the familiar *Gymnadenia conopsea*, and owes its origin to the latter genus having, in the *Genera Plantarum*, been merged in *Habenaria*. Mr. Rolfe, however, thinks the two sufficiently distinct, and in forwarding the following note, he remarks that it is the third natural hybrid Orchid recognised in Great Britain within recent years. The note is as follows:—

GYMNADENIA × CONOPSEO-ALBIDA.

Another very interesting addition to the British Orchid-flora has just come to light. A note by C. Wolley Dod, in the *Gardeners' Chronicle* for July 23 (p. 61), states that about the end of June, a friend on a visit in the Highlands sent him for identification an Orchid which he found near Arisaig, in Inverness-shire, which he recognised as resembling *Habenaria conopsea*, but differing from it, especially in the spur, which was much shorter. Not knowing it, he sent it to his son, Captain Wolley Dod, who is well up in the native flora. It was new to him, though he doubtfully, and from description only, referred it to *H. odoratissima*; a native of the mountains of France and Germany; he also asked if more specimens could be obtained. With some difficulty, as the flowering-season was then over, two more were found. These were brought by Captain Wolley Dod to Kew (where one is now preserved), and a comparison with authentic specimens soon showed that they did not belong to *H.* (or really *Gymnadenia*) *odoratissima*. He had also suspected that the plant might be a natural hybrid between *Gymnadenia conopsea*

and *G. albida*, as it was found associated with these two species and *Orchis maculata*, and he left me to work the question out. These two species are very dissimilar; *G. albida* has white flowers, an equally tricuspidate lip, and a short, swollen and obtuse spur, not equalling the lip, while *G. conopsea* has rose-purple flowers, an unequally trilobed lip, and a filiform, acute spur many times longer than the lip. The hybrid—acut spur evidently is—has rose-purple flowers, but the spur is stout, and only twice as long as the lip, which latter organ is about intermediate in shape; the leaves also are intermediate in shape, but the spike closely resembles that of *G. albida*. Such a hybrid has already been recorded by Hegelmaier, in 1864, under the name of *Gymnadenia conopsea* × *albida* (*Estr. Bot. Zeitschr.*, 1864, pp. 102-104), and by Kerner, a year later, as *G. × Schweinfurthii* (*Verhandl. Zool. Bot. Gesellsch. in Wien*, xv., p. 213, t. 5, fig. 15-16). It was found by Dr. Hegelmaier, in July, 1863, in the Austrian Alps, and the Scotch plant is evidently substantially identical. The discovery is very interesting, and it seems probable that it might be found in other localities, where the two species occur intermixed, if searched for. The Scotch locality is described as within half-a-mile of the sea, and not more than 100 feet above it. R. A. Rolfe.

SCARCITY OF WASPS.—Several gardeners have remarked to me recently of the scarcity of wasps so far. That is rather a matter for congratulation, especially that Plums and Pears, the fruits they specially favour, are rather scarce. Still, even these insect pests may but be partaking of the general character of the season, and be only late. A week or two will reveal them or their absence. If really scarce, the cause may be found in the exceeding coldness of the usual season for the appearance of the hibernated queens. I noticed in a country show recently, where prizes were offered for the largest number of queen wasps to be delivered to the secretary by an early date, that not more than about forty were sent. That is few compared with what is sometimes seen, when prizes for their destruction are offered. A. D.

SEEDLING FUCHSIA.—I send you specimens of one of my seedling Fuchsias, which is somewhat distinct from many that have come under my notice, from the fact that the style and stigma are almost pure white, which renders the flowers, produced very profusely, very interesting and conspicuous, especially if arranged amongst plants with a suitable background. The habit is good, and the growth extraordinarily strong, scarcely requiring anything to support it in position. In this respect I have never seen its equal. The principal and chief characteristic is this, combined with the white style and stigma, and the extraordinary texture of the sepals. *G. Fry*, F.R.H.S., Lewisham, S.E. [The flowers sent by Mr. Fry are of a pretty Turk's-cap shape, with red sepals, and purple corolla, with organs as he describes them. Ed.]

BLIND STRAWBERRY PLANTS.—This is undoubtedly a very important subject to all Strawberry growers. In your last issue of the *Gardeners' Chronicle*, J. Barnard asks for information as to the cause of blindness in these plants; whilst on the previous page "D. T. F." gives some valuable information on the subject. So far, then, I think we can tabulate the causes of blindness as follows:—1, Excessive vigour caused by a superabundance of nitrogenous foods; 2, The destruction of the blossoms by frost and sudden changes in the climatic conditions; 3, Excessive drought or dryness; and 4, The destruction of the roots by digging between the plants. Plants may also become barren or partially so by imperfect fertilisation. The practice of propagating from blind plants is not to be recommended. A series of experiments on this important subject would, no doubt, yield valuable information to that already obtained; and would add greater force to the theories already propounded. Are Strawberries protandrous or protogynous? If either, would it not be better to grow several varieties in immediate proximity to each other for fertilisation? S. H.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

AUGUST 9.—Present: Dr. M. T. Masters, in the chair; Mr. Bennet-Poë, Rev. W. Wilks, Mr. Marshall, Rev. Prof. Henslow, Hon. Sec., and the following visitors:—Prof. J. Bailey, of the University, Ithaca, N.Y.; Herr J. K. Budde, Curator of the Botanical Gardens, Utrecht; and Mr. Gordon.

Tomato with Red and Yellow Fruit.—Mr. J. McLean, Luttrellstown, Clonsilla, Co. Dublin, sent some golden-yellow fruit, with the following observations:—"The plant which produced them is one out of 145 Frogmore (red) selected. The first cluster produced the true red sort, but on the same plant three trusses consisted of yellow fruit, as sent." Prof.

Bailey observed that he had raised yellow-fruited Tomatos from the seed of red-fruited plants, but had not seen a case resembling the present one, in America; though he had known a cutting of a red-fruited sort to bear yellow fruit, as well as a red fruit being striped with yellow.

Scolopendrium var.—Mr. Marshall exhibited a plant raised from a frond, which was remarkable for its great size, being quite a foot broad, and terminated with numerous barren subdivisions. It was buried, leaving the subdivisions only exposed. Roots were formed at the bases of the incisions, so that five plants were raised. Of these two repeated the remarkable fronds, two reverted to the wild form, and the one exhibited bore four fronds with digitate extremities, one frond with a crisped margin (*var. crispum*), one being flat as in the wild state. The first two will, it is hoped, establish a new race.

Tomatos with Supernumerary Carpels.—Dr. Bonavia sent two specimens; one, consisting of four carpels, which, instead of being coherent to form a single fruit, were only united at the base, and therefore nearly apocarpous. The other had several extra carpels issuing out of the centre above. These formed a whorl of carpels, in addition to the normal series. It resembled the "Mellarose Orange" in this respect.

Poppy-head, with Pistillody of the Stamens.—Herr J. K. Budde exhibited a fruit of *Papaver somniferum* with a complete whorl of miniature carpels around the base; these being metamorphosed stamens. This peculiarity is well known; but it is interesting to hear that Prof. de Vries has succeeded in fixing it by selection, so that this monstrosity now comes true by seed. A similar phenomenon is common among Wallflowers. With reference to hereditary monstrosities, Mr. Bailey observed that a species of *Echinops*, with a fasciated and twisted stem, as also the spirally-twisted variety of the Fuller's Teazle, can be now perpetuated by seed. Prof. Henslow inquired if the Weeping Ash was known to be perpetuated by seed, as of thousands of seedlings in his garden at Ealing, none ever showed any inclination to weep; though the late Prof. J. S. Henslow found a slight tendency to weep to exist for two or three years in his experiments at Hitcham; but the plants grew erect afterwards. Mr. Wilks observed, on the other hand, that a young tree a few years old at Shirley had begun to show a tendency to weep.

Crassulaceous Hybrid.—Mr. Veitch sent trusses of flowers of a new hybrid, raised by Mr. Seden, between *Kalosanthes coccinea* (female) and *Rochea falcata* (male). The flowers of the hybrid were small, as in the female parent, but the colour approached that of the male. In many points it was intermediate between the two parents.

Cattleya granulosa, Dimerous.—Dr. Masters exhibited, on the part of Mr. Cobb, a blossom with its parts in twos, there being two large sepals, two lips, &c.—not a rare phenomenon in trimerous flowers, as *Iris*, &c.

Hybrid Nymphæas.—Dr. Masters exhibited several kinds, as shown in the Drill Hall by Mr. Hudson, Mr. Mitford, C.B., and others, with the purpose of calling attention to the different arrangements and numbers of the air-canals in the stems of the flowers and in the petioles. He observed that the *Nymphæas* could be grouped by means of them.

Plymouth Strawberry.—A specimen was received from Mr. J. Arrowsmith, of Bank Road, Glazebrook, Manchester. It is a monstrous condition of the ordinary fruit, in which some of the achenes are replaced by leaves, as in the well-known Alpine Strawberry, of which the present case is a variety. It was described by Ray, who gave the name, having received it from Plymouth. It resembles the green Rose, in thus having its floral organs more or less in a state of reversion to leaves.

Strawberry Plants Defective.—Some plants were received from Mr. J. Lyne, of The Gardens, Foxbury, Chislehurst, in which the crowns were generally blind. The variety is Royal Sovereign. Mr. Lyne writes:—"Last autumn we planted a bed of last season's runners, with the object of getting early runners this year. They grew well, and made a fine lot of early runners. All trusses of bloom were picked off the parent plants as soon as they appeared. The runners were layered, four in a 6-inch pot, and all rooted well; but last week, when transferring them into single pots, we found about half were blind, the crowns being brown within. A healthy plant would be often growing in the same pot with defective ones." Perhaps some grower of Strawberries may have had a similar experience, and can throw some light on the mystery. Sections of the crown-buds revealed no visible fungi nor insects, but the scales were turning brown from the exterior part inwards, apparently suggestive of an external source of the mischief.

Floral Committee at Chiswick.

AUGUST 16.—The thunderstorm early in the morning had refreshed the plants, which had suffered from the heat and lack of moisture. The *Violas* were inspected, but only one was selected for three marks, namely, Bronze Queen (Forbes), bronzy crimson with fiery gold centre, a somewhat striking variety.

Awards of Merit were made to *Canna William Marshall*, a magnificent variety, showing an advance in form, the large broad petals giving the flowers the appearance of a red and gold-coloured *Cattleya*, the ground is yellow, much spotted with orange-red, and with a yellow margin. This is a seedling raised at the gardens of the Society, and named by the Floral Committee; also to *Canna Stadtrath Heidenreich*, a deep bright vermillion self, of very fine character, with bold dark foliage. Three marks were awarded to *Comte de Bouchard*,

yellow, spotted with bright crimson, fine in quality; the same to Countess de Vartoux Florence, yellow, heavily spotted with bright orange-red; and an Award of Merit was made to a fine variety named *Partenope*, rich orange-brown, the petals feathered on the edges with crimson, dwarf, and very free.

Three marks were awarded also to a very fine strain of the double Indian Pink, *Dianthus chinensis*, containing many handsomely marked varieties, well deserving of a place in the garden; and also to *Dianthus lacinatus*, single-flowered, mixed; composed of many pretty varieties, all of large size with fantastically-cut margins. All the Indian Pinks appear to be good dry-weather plants. Both the foregoing were from Messrs. WATKINS & SIMPSON.

MEETING OF THE GHENT CHAMBRE SYNDICALE.

At the last monthly meeting of the *Chambre Syndicale des Horticulteurs Belges*, and of the *Société Royale d'Agriculture et de Botanique*, the following Awards were made:—

Certificates of Merit for *Odontoglossum Adriæ* (*crispum* × *Hunnewellianum*), *var. M. Verdonck*, from M. Maurice Verdonck; and *Cyrtostachis Rendah*, from M. L. De Smet-Duvivier (*à l'unanimité*). Honourable mention for cultivation was allotted to *Aralia Kerchoviana*; and Honourable Mention also for *Selaginella prœflora*, from M. De Smet-Duvivier.

ISLE OF WIGHT.

AUGUST 9.—The Whippenam Cottage Garden Society held their first exhibition on the above date in the picturesque Rectory Gardens which adjoin Whippenam Church.



FIG. 39.—ODONTOGLOSSUM CRISPUM LEHMANNI (SCHOFIELD'S VARIETY).

(See "Orchid Committee Report," p. 123, ante.)

The exhibition was favoured with the presence of the Queen and Princess Henry of Battenberg (Governor of the Island), Princess Victoria of Schleswig-Holstein, and the Duke and Duchess of Connaught. The exhibits were numerous and of excellent quality, considering the dry season. Her Majesty evinced much interest and pleasure in the garden products of her parishioners; and there is no doubt but this exhibition will be a great stimulus to the development of cottage gardening in the Royal parish. School gardening is taught at Whippenam Schools by the head mistress (Miss Thomas) with great success. S. H.

WARGRAVE AND DISTRICT GARDENERS' ASSOCIATION.

AUGUST 9.—A monthly meeting of the above Association was held on Tuesday in the Parish-room, Mr. W. POPE presiding.

It was decided to ask him to do so at the next meeting. Messrs. W. POPE, F. POPE, and W. GREENAWAY, were unanimously appointed judges for the ensuing month. The Certificate of the Society was presented to Mr. W. POPE for his exhibit of a group of *Streptocarpus*. A splendid lot of *Caladiums*, including *Comte de Germainy*, *Sirius*, *Elsie*, *Comtesse de Brosse*, *candidum*, *John R. Box*, *Princess Teck*, *argyrites*, &c., were staged for exhibition by the chairman, who also showed two dishes of Tomatos, red and yellow, perfect in form and colour. A discussion took place on *Caladiums* and garden matters generally, in place of the usual paper.

SEVENOAKS HORTICULTURAL.

AUGUST 10.—No more delightful place could be selected for holding a flower show than Knole Park, in which Lord Sackville had kindly allowed the show to be held. It is close to the town, is delightfully undulated, and contains magnificent Oaks and Beeches. The day was windy, and the heavy clouds threatened rain, but not any fell, and there was a good company.

Groups.—One large tent was filled with these and specimen plants. There were groups of flowering and foliage plants arranged in a given space, and these were placed along the wall of the tent, on one side, and alternately there was a group of Ferns of equal size, and this mingling materially helped the effect. Mr. A. HATTON, gr. to Mrs. SWANZY, The Quarry, had the best group of Ferns, a very effective one; Mr. Hough, gr. to Mr. LOMBARDE, Beechmont, was 2nd; both were well arranged, and the Ferns in excellent condition. The best arranged group of plants came from Mr. C. SUTTON, gr. at Chevening. This had Palms, *Gloriosa superba*, *Campanula pyramidalis*, *Begonia corallina*, *Carnations*, *Codæums*, Ferns, &c., admirably disposed; Mr. G. FARNELL, gr., Firlawn, Tonbridge, was a good and close 2nd.

The best collection of six exotic flowering-plants came from Mr. A. GIBSON, gr. to T. A. BURNABY-ATKINS, Esq., Halstead Place, who had very fine examples of *Dipladenia Brearleyana*, and *D. insignis*, both grandly grown and bloomed; *Clerodendron Balfourianum*, *Ixora Dixiana*, and *I. Fraseri*, and *Anthurium Scherzerianum*; Mr. A. HATTON was 2nd, with fine examples of *Allamanda Hendersoniana*, *A. nobilis*, *Gloriosa superba*, *Ixora Fraseri*, &c. Mr. HATTON had the best six specimen foliage plants, staging *Alocasia Thibautiana*, a very fine character; *Latania borbonica*, *Marattia salicifolia*, a fine example; *Cibotium princeps*, *Anthurium Veitchianum* and *A. crystallinum*. Mr. J. TALMAGE, gr. to Miss HODGSON, Hereford, was 1st with four very fine specimen *Caladiums*, and there were also good bushes of *Coleus* and specimens of Hardy Ferns. Mr. J. TALMAGE had the best six varieties; Mr. C. Noble, gr. to Miss AUSTIN, Sevenoaks, coming 2nd.

The best specimen flowering plant was *Dipladenia boliviana*, a very fine large-flowered variety, from Mr. C. SUTTON, Mr. GIBSON being 2nd with *Anthurium Scherzerianum*. The best specimen foliage plant was *Alocasia Thibautiana*, from Mr. HATTON; Mr. GIBSON was 2nd, with *Cycas revoluta*.

Fuchsias were nicely-grown bush specimens. The best six were from Mr. G. COOPER, gr. to H. FOSTER, Esq., Hippingham; Mr. H. HEATH, gr. to Mrs. PETLEY, Riverhead, was 2nd. Mr. TALMAGE had the best four specimen *Begonias*; Mr. W. ADAMS, gr. to J. DIXON, Esq., was 2nd.

Zonal Pelargoniums and table plants were also shown. There were classes for plants shown by gardeners in smaller places, and by amateurs, all of which were pretty well filled.

In cut flowers, Mr. C. SUTTON had the best twelve *Roses*. Mr. SEALE, Vine Nursery, Sevenoaks, had the best twenty-four *Dahlias*. The best twelve came from Mr. A. PARKER, Ivy Hatch. *Cactus* and single varieties were also shown. The best collection of twelve bunches of stove and greenhouse cut flowers came from Mr. GIBSON. There was a class also for bunches of hardy flowers. Mr. E. HODGSON, gr. to Miss MORPHEW, Sevenoaks, had the best six bunches of border *Carnations*. There were classes for cut flowers shown by amateurs and others.

Fruit was also invited, the leading class being for six dishes, but owing to the names of the exhibitors not having been supplied, we cannot give them. Some very good Black *Hamburg Grapes* were staged, and Mr. HOUGH had two good bunches of *Muscat of Alexandria*. *Peaches*, *Nectarines*, *Plums*, *Apples*, *Cherries*, &c., were also staged.

The best collection of *Grapes* in three varieties came from Mr. T. OSMAN, gr., Ottershaw Park, who had *Alicante*, *Black Hamburg*, and *Chasselas Napoleon*, one bunch of each; Mr. W. HOUGH was 2nd.

In the way of table decorations, the best-arranged dinner-table was set up by Mr. S. COOK, The Gardens, Rosefield, done in good taste; Mr. W. A. SEARING was 2nd. The latter had the best centre-piece; and Miss ETHEL COOK the best bouquet. Mrs. SEALE had the best-arranged basket of flowers.

Vegetables.—The class for a collection of nine varieties of vegetables brought a good competition, and it was a class that seemed to have aroused a good deal of local interest. There were other classes also for vegetables.

Miscellaneous.—A collection was sent by Messrs. VEITCH & SONS, of Chelsea, making a very fine and imposing group of plants; Messrs. J. FRED & SONS, Lower Norwood, had a magnificent collection of *Caladiums*; and Mr. SEALE a large and finely arranged bank of plants and cut flowers in great variety; Messrs. CUTBUSH & SON, Highgate, had a fine group of plants; Messrs. H. CANNELL & SON, Swanley, a striking collection of *Cannas*; Mr. J. R. BOX, Croydon, cut flowers; and other smaller exhibits were also staged.

BISHOP'S STORTFORD.

AUGUST 10.—This Society, which dates back to 1838, held its annual show on a most extensive scale in the grounds of John Parker, Esq., J.P., The Grange, on the above date.

The fruit and the vegetable classes brought together some first-class produce. *Grapes*, *Peaches*, and *Nectarines* were all first-class. Like the Shrewsbury show, that at Bishop's Stortford does not depend upon horticultural productions merely, but includes classes for honey, corn, roots, and poultry. This in a purely agricultural district, is most commendable, and should be more frequently adopted.

It is well worthy of remark that the present hon. secretary, Mr. W. Smith, has held that post, which is no sinecure, for the past twenty-eight years, and his interest in the welfare of the Society appears to increase rather than diminish as the years go by.

Plants.—In the group class alluded to above, Mr. G. Barker, gr. to H. A. BLYTH, Esq., was placed 1st with a tasteful arrangement, well broken up and diversified, being more in the way of the groups seen staged at such places as Shrewsbury, but a little lacking in colour at the back; Mr. J. Richardson, gr. to Sir J. BLYTH, was a good 2nd; he, on the other hand, had rather too much colour, whilst his arrangement was of the old-fashioned form and outline.

The best six stove and greenhouse plants were staged by Mr. T. Lodge, gr. to Mrs. MENET, being followed closely by Mr. G. Beech, gr. to J. BARKER, Esq.

The 1st prize for six foliage plants was awarded to Mr. J. RICHARDSON, who had some well-grown examples of Palms, Mr. G. BARKER, who came 2nd, having a uniformly healthy lot of plants.

Exotic Ferns, which were excellent, were shown best by Mr. B. Calvert, gr. to Col. ARCHER HOUBLON, Mr. Clarke, gr. to C. GOLD, Esq., M.P., pressing close for the 2nd prize, both exhibitors showing several well-grown Adiantums.

The tuberous Begonias were a feature of the show, the plants well-flowered, and of up-to-date varieties. The best group came from Mr. W. Pavitt, gr. to W. SMITH, Esq.; this was comprised entirely of well-grown and freely-flowered plants, the double varieties being conspicuous by their high-class quality. Mr. E. HARRIS, gr. to A. TAYLER, Esq., was a close second, some of whose plants were larger, and many smaller, than the preceding exhibitors, being scarcely so well flowered.

Tuberous Begonias in hanging baskets were shown best by the aforementioned, but the prizes were reversed. And in the classes for six double and six single varieties, Mr. E. HARRIS was likewise 1st.

Cut Flowers.—These constituted a great attraction in the show. Messrs. PAUL & SON, Cheshunt, were 1st for twenty-four bunches of hardy perennials, or bulbous flowers, staging in their well-known style; Mr. H. BRACE, gr. to H. A. HARE, Esq., came in 2nd with a good display.

The best Dahlias were staged by Mr. MORTIMER, of Farnham, in the open classes, the local exhibitors not being so well up in the newer kinds.

The 1st prize in the class for dinner-table decorations was awarded to Miss STREET, of Bishop's Stortford, whose arrangement was very tastefully done, pink and white predominating; Mrs. F. KNIGHT, of Saffron Walden, was a good 2nd in this class of twenty-three competitors.

The best decorated fire-place and mantel board was that shown by Mrs. C. JOSCELYNE; it was very light and tastefully done, showing the touch of the artist. Mr. T. LODGE had the best exhibit of this kind open to gardeners only, but he used more material than that of the previous prize-winner. It is worth noting that in all of these decorative classes the frequent mistake of depending largely upon exotic flowers, as Orchids, &c., was not all evident.

Fruit Classes.—For eight dishes of fruit, Mr. A. Handscomb, gr. to R. C. HALDANE, Esq., was placed 1st, the Grapes, both black and white, being excellent; also the Peaches and Nectarines. Mr. B. CALVERT, gr. to Col. ARCHER HOUBLON, followed in this class.

The best black and the best white Grapes, both first-class, were shown by Mr. E. Skelton, gr. to J. BARKER, Esq., the Graperies; Mr. CALVERT in the black class, and Mr. J. RICHARDSON in the white, were each 2nd respectively.

The last-named exhibitor had the best dish of Peaches, fine fruits from under glass. H.

HASTINGS HORTICULTURAL SHOW.

AUGUST 10.—This annual event took place in the Alexandra Park, in overcast and windy weather, which deterred many persons from visiting the show. The result goes far to confirm my opinion, that country flower shows are united out, and even the addition of good bands and sports played, are powerless to stimulate the interest of the general public, at any rate in the south of England.

Fully aware of the waning popularity of flower shows, the Committee look to the 6d. admission to make the affair pay its expenses, and alas, almost to the universal regret of exhibitors the time of closing the tents was postponed till 10 o'clock, making it impossible to those who came from a distance to pack up and leave even by a late train. I much doubt the wisdom of this, and there was evidence it had deterred many an old supporter entering the lists, while it entailed more expense and work for the committee, not to mention the necessity of engaging extra police to take care of the exhibits. With all this, it is pleasing to record on the whole a good show, the only marked deficit being in the fruit, notably in Apples, Pears, and Plums, while Figs which are generally so fine, were conspicuous by their absence. Grapes made the best display, Madresfield Court and Alexandra Muscats being extra fine, both in berry and colour.

The honours in flowering and foliage plants, and Ferns, were pretty equally divided between Mr. J. WARREN, Handcross Park, Mr. T. PORTNELL, Beaufort, and Mr. ALF. GADD, St. Leonard's, the second failing this year to take the high standing he usually does, but in neither collection was there a plant that deserved special mention. Class 6, eight exotic Ferns, was well filled, Mr. J. WARREN taking 1st, with grand examples of *Davallia polyantha*, *Marattia alata*, *Adiantum*

cardiochlaena, *Nephrolepis davalloides* *furcans*, *Cibotium Barometz*, and others.

Cut Flowers were few and not up to the usual standard, which must be due to the dry season. Roses, only one exhibitor in twenty-fours, and a very good fresh box, quite an eye-opener to local exhibitors, but no better than one might expect from a "National" prize-winner. For the first time I have seen *Nemesis Suttoni* staged in a collection of cut annuals, and it attracted much attention, while hybrid annual *Chrysanthemums*, *C. carinatum* × *C. segetum* were most conspicuous, owing to the richness of their colours, particularly the variety named *Morning Star*. It was a little too early for Dahlias, but there was a good competition, the local champion, J. STREDWICK, coming in well both for show, Cactus, and Pompons.

Fruit.—There was nothing of extra merit in the fruit, though the Peaches of J. SNOW, Wadhurst, were good in colour, size, and finish; and a fine dish of Plums, *Reine Claude du Comte d'Athens* were conspicuously 1st, coming from Mr. J. WARREN, gr., Handcross Park. Melons were too mixed, and not of fine colour, and they gave the judges a thankless task. Would it not be better to give four prizes for Melons, leaving the exhibitor to show green or scarlet-fleshed, or other kinds at his option?

Table Decorations not so good as usual, Miss RUST, of St. Leonard's, being a good 1st, but overdone with Gypsophila. Another local exhibitor took 1st in the open class, J. NORCUTT making lavish use of the leaves of *Aralia Veitchii* and other fine-foliage to finish and fringe his stands, while the pretty neutral-coloured *Streptocarpus Rexi* was used with telling effect in combination with flowers of brighter hue.

Groups were up to the usual standard of excellence, Mr. PORTNELL securing an easy 1st, his three plants of *Disa grandiflora* being very telling.

Nurserymen's Exhibits were few. Mr. J. CHARLTON, Tunbridge Wells, staged about sixty bunches of cut flowers of hardy herbaceous perennials, and he had also fifty bunches of seedling Carnations and Picotees, some of which were of considerable merit.

In conclusion, I am glad to be able to say that the experiment of keeping open till 10 o'clock answered well financially, as there was a crush of spectators in the evening; but there was muttered thunder among those exhibitors who came from a distance, and had not netted enough prize-money to afford them bed and board at the Queen's Hotel. *Experience.*

MILVERTON HORTICULTURAL.

AUGUST 11.—The eighth annual exhibition of this Society was held on the above date, in four tents, two of which were set apart for cottagers' produce, and, taken on the whole, numerous fine exhibits of vegetables, fruit, and flowers were brought together.

In the gentlemen's gardeners' tent, the groups formed the most attractive feature, and the 1st prize was won by P. GROVE, Esq. (gr., Mr. E. M. GARLICK), whose arrangement displayed much originality in design; J. D. BARBOUR, Esq. (gr., Mr. G. HOPKINS), taking 2nd prize, with a tastefully-arranged lot of plants.

Some good examples of Ferns were shown. The 1st prize for three specimens was taken by T. WILCOX, Esq. (gr., Mr. H. SNEYD). For six stove or greenhouse plants, three foliage and three in flower, C. J. SHAW, Esq., gained 1st prize, his best plants being a well-flowered *Bougainvillea glabra*, *Codiaeum Queen Victoria*, *Cycas revoluta*, and *Allamanda Hendersoniana*.

J. D. BARBOUR, Esq., was well to the front with a collection of fruit; his best dishes comprised Figs, Black Rabicoune (excellent), Ballegarde Peach, and Elruge Nectarine. The Grapes shown call for little comment. The 1st prize for two bunches was taken, for moderately good bunches of Muscat of Alexandria, by R. O. MILNE, Esq. (gr., Mr. W. DRAPER).

Non-competitive exhibits were rather many, viz., a fine group of plants, consisting of Kentias, Lilliums, *Codiaeums*, *Eulalias*, and Ferns, from Mr. R. GREENFIELD, nurseryman, Leamington, who also showed hardy herbaceous flowers in great variety. Messrs. HINTON BROS., Warwick, staged a fine and varied collection of Sweet Peas. Mr. F. PERKINS sent a fine and diversified collection of flowers and hardy herbaceous plants, in about forty diverse species. The wreaths and crosses of Messrs. FINCH & Co. were greatly admired.

Mr. E. CRAMP, of the Manor Fruit Farm, Whitnash, staged a very fine collection of fruit, consisting of a Melon, excellent Grapes, Peaches, Plums, Tomatos, &c. H. T. M.

TAUNTON DEANE HORTICULTURAL.

AUGUST 11.—Everything that could assist in making a flower show a success was to be met with at the thirty-first exhibition of this society held in Vicary Park. The entries were mostly numerous, excepting in classes which the peculiar season this year had told against, and lastly, the weather was glorious.

Specimen Plants.—Lot no one despair of finding specimen stove and greenhouse plants if they are required for any special purpose. There were five collections of twelve specimen stove and greenhouse plants in flower, and four of them made one of the finest banks of specimens we have seen for many a day. We doubt if ever before Mr. JAMES CYPHER, of Cheltenham, has put up twelve finer examples than those which won for him the 1st prize on this occasion; they were grandly grown and bloomed, and beautifully fresh.

Chief among them were *Statice profusa* and *intermedia*, *Ericas Austriana*, *Aitoniana*, *Fairicana*, and *Turnbulli*, *Ixora Duffi*, a very fine *Allamanda nobilis*, *Stephanotis floribunda*, and *Bougainvillea floribunda*. Mr. W. FINCH, Coventry, was a very good second; his leading plants were *Erica ampullacea*, a fine piece, *Allamanda grandiflora*, *Rondeletia speciosa* major, and *Stephanotis floribunda*; and Mr. ROWLAND, gr. to W. BROCK, Esq., Exeter, was 3rd, with some very good plants.

With six specimens Mr. CYPHER was again 1st, having equally fine examples of *Erica Austriana*, *E. amula*, *Statice intermedia*, *Stephanotis floribunda*, *Bougainvillea Sanderiana*, and *Ixora salicifolia*. Mr. VAUSE was 2nd, his best plants were *Erica Lindleyana*, *Bougainvillea glabra*, and *Ixora coccinea*.

In the amateurs' division for twelve, foliage plants admissible, Mr. W. THOMAS, gr. to W. G. MARSHALL, Taunton, was 1st; and Mr. ROWLAND 2nd. These positions were reversed in the class for six plants. In that for four specimens, Mr. PEEL was 1st, and Mr. ROWLAND 2nd.

Orchids.—Two collections of four Orchids were staged, Mr. W. THOMAS coming 1st with *Cattleyas gigas* and *Gaskelliana*, *Cypripedium Rothschildianum*, and a large example of *Epidendrum pismatocarpum*; Mr. J. CYPHER was 2nd, having *Vanda coerulea*, two *Cattleyas*, and *Laelia crispata*. In the amateurs' division, Mr. THOMAS was again 1st; and Mr. PEEL 2nd.

Begonias.—Other flowering-plants consisted of Begonias, shown in the open class, for eight specimens. Here Mr. THOMAS was 1st with finely-grown and flowered plants; he was also 1st with six single-flowered in the amateurs' division, but was beaten with six doubles; the Rev. J. D. PRING, Taunton (gr., S. Dyte) taking the 1st prize with capital varieties.

Zonal Pelargoniums were present in somewhat severely-trained specimens, grown in large pots. In the open class, Mr. H. MOCKRIDGE, Trull, 1st for six single and four double flowered plants; Mr. H. GODDING, florist, Taunton, 2nd in both classes. These plants were also well shown in the amateurs' division. Mr. C. HARMAN had the best four single and Mr. S. BENNETT the best four double-flowered specimens.

Fuchsias were represented by fairly well-grown and bloomed bush specimens, but they fell below Trowbridge form. Mr. H. B. GOLDSMITH was 1st in the open class with four specimens, and also in the amateurs' division, with the same number. Mr. H. MOCKRIDGE had the best specimen light variety, and Mr. W. T. TIDBURY the best dark.

Cockscombs were fairly good in both divisions. *Gloxinias* and *Achimenes* were in good character; the latter are excellent exhibition specimens when well grown, and the Taunton committee decline to drop them. They also stand by Japan Lilies, Balsams, *Petunias*, and others of the old subjects, though they appear to be gradually declining features.

The best newly-introduced plant was *Acalypha Sanderiana*, shown by Mr. THOMAS in good character, and which naturally attracted a good deal of attention. Mr. J. CYPHER was 2nd, with the same subjects a little less fully developed. The best new foliage plant was from Mr. THOMAS, one of the newer introduced *Crotons*. The best specimen stove plant was *Clerodendron Balfourianum*, from C. J. ESDAILE, Esq., Cothelstone (gr., T. Essex). Mr. T. TIDBURY was 2nd, with *Stephanotis floribunda*. The best greenhouse plants was a fine piece of *Dasyllirion acrotrichum*, from Mr. S. KIDLEY; Mr. W. FINCH coming 2nd, with a small but good specimen of *Erica Marnockiana*. Specimen Ferns, and *Lycopods*, &c., were also staged.

Foliage Plants were shown in the form of very fine specimens. Mr. J. CYPHER, who was 1st with eight, had four splendid Palms, viz., *Kentias australis*, *Fosteriana*, and *Belmoreana*, and *Latania borbonica*, and four brilliant *Codiaeums* (*Crotons*), in *Queen Victoria*, *Cheloni*, *angustifolium*, and *flambeau*. Mr. W. FINCH, who was 2nd, had *Latania borbonica*, *Codiaeum Queen Victoria*, and *Cycas revoluta*. Mr. PEEL had the best six in the amateurs' division, and Mr. ROWLAND the 2nd best. Mr. ROWLAND had the best eight exotic Ferns in the open division; and Mr. PEEL the best six in the amateurs'. As a rule, the Ferns are too much crowded at Taunton to be seen to the best advantage, for though the tents are spacious the exhibits are numerous. *Selaginellas* are also shown, but not up to the mark of by-gone reputation. Nice bushes of *Colours* were staged, and there were pretty table plants.

Groups of Plants arranged for Effect were seen to much greater advantage than formerly, as they now have a tent to themselves. Of the four shown in the open class Mr. ROWLAND had the best good plants of the usual character, being effectively grouped in a space of 100 feet; Mr. FINCH was 2nd and Mr. PEEL 3rd. Of the four, of 50 feet, entered in the open class, Mr. ROWLAND was again 1st; Mr. C. E. ESDAILE 2nd, and Mr. PEEL 3rd.

Specimen Plants of good quality were shown by cottagers, chief among them Ferns, *Campanula pyramidalis*; one of these trained over a wire arch was very effective; *Plumbago capensis*, *Fuchsias*, *Begonias*, *Zonal Pelargoniums*, &c.

Cut Flowers are always a strong feature here, though owing to the incidence of the season, Roses, Dahlias, Asters, and Gladioli, were not up to their usual mark. Mr. J. MATTOCK, Oxford, was awarded the 1st prize for thirty-six capital blooms of Roses in the open class, having in remarkably good character Mrs. J. Laing, Alfred Colomb, Duke of Teck, Dupuy Jamain, Marschal Niel, Medea, A. K. Williams, Marie Baumann, L'Eclair, Her Majesty, Charles Lefebvre, Ulrich Brunner, Niphotos, &c.; 2nd, Mr. THOMAS HORBS, Easton

House, Bristol; Mr. MATTOCK also had the best eighteen blooms, the leading varieties being L'Eclair, Lawrence Allen, one of Messrs. Cooling & Sons' new varieties, likely to be very useful; Marchioness of Londonderry, Horace Vernet, Mr. W. J. Grant, Comte Raimbault, and Maréchal Niel. 2nd, Messrs. JARMAN & Co., Chard, With eighteen Teas, Mr. MATTOCK was again 1st, having good examples of Noman, Cochet, Maréchal Niel, Ernest Metz, The Bride, Medea, Madame Cusin, Innocente Pirola, Souvenir de S. A. Prince, and Catherine Mermet. Dr. BUDD, Bath, was 2nd. In the amateurs' division Dr. BUDD was 1st, with twenty-four, and also with twelve varieties, and also with twelve Teas; Mr. THOMAS HOBBS being 2nd in each case. Mr. G. HUMPHRIES, Florist, Chippenham, had the best twelve Dahlias; Messrs. JARMAN & Co. were 2nd. Mr. HUMPHRIES took the 1st prize, with twelve nice fancy Dahlias, being the only exhibitor. He was also 1st with six Cactus and nine Pompon varieties, shown in bunches. Mr. J. BURGESS, Kingswood, had the best nine bunches of single varieties. In the amateurs' division Messrs. HOBBS, BURGESS, and Mrs. McALLISTER, were the leading prize-winners in the classes for Dahlias.

Gladioli were somewhat poor in quality, the best twenty-four came from Mr. S. Bird, gr. to F. H. Fox, Esq., Wellington; Messrs. E. Foote & Son, Sherborne, were 2nd.

Phloxes of the herbaceous type appeared to show the effects of the drought, but stands of P. Drummondii were delightful, especially a collection from the Rev. J. D. PRING. Mrs. HICKLEY had some good trusses in the amateurs' division.

Asters fell much below their usual level, the "Comets" made the best display.

Hollyhocks.—A stand of twelve which gained the 1st prize for Mr. W. SMITH, were very good; Mr. J. BURGESS was a good 2nd.

Carnations, owing to the late season, were very good, the best twelve coming from Mr. H. W. WEGUELIN, Teignmouth, who had bold yellow-grounds and fancies; and Mr. W. S. CLEMENTS, Tiverton, was 2nd. In the amateurs' division Mr. C. WITHERS was 1st.

Begonias were shown at Taunton as cut blooms; the quality, double and single alike, good.

Twelve bunches Stove and Greenhouse Flowers.—The best came from Mr. THOMAS, consisting of some good Orchids and hot-house flowers; Mr. H. M. MAIDMENT, Bristol, was 2nd. Mr. THOMAS was also 1st in the amateurs' division.

Bunches of flowers of hardy, herbaceous, and bulbous plants were not up to the usual mark, but bunches of hardy annuals made an attractive display.

Table Decorations, including wild flowers in bouquets and collections, filled one tent. Mr. J. CYPHER had the best table piece, yellow and pale salmon-tinted Carnations being used with good effect; Mr. G. LOCK was 2nd. Mr. CYPHER was also 1st with an epergne; Mr. A. MURRELL, Bristol, was 2nd. Mr. W. H. COLES, Bristol, was 1st with a hand bouquet, and Mrs. J. CUFF, Taunton, 2nd.

Some special prizes offered by Mr. R. Sydenham, for nine bunches of Sweet Peas, introduced these charming flowers to the schedule for the first time, and a very good beginning was made. Mr. J. SNOW, The Gardens, Oakford, Devon, was 1st, and Mr. McALLISTER 2nd. Other prizes were awarded.

Collection of Fruit in eight kinds came from Mr. Strugnell, gr. to W. H. LONG, Esq., Rood Ashton, Trowbridge, who had good Alnwick Seedling and Foster's Seedling Grapes, Alexander Noblesse Peach, Stanwick Elruge Nectarine, Negro Largo Fig, Apricots, Melons, and Cherries; 2nd, Mr. A. CROSSMAN, gr. to J. BRITTON, Esq., Yeovil, who had Madresfield Court and Buckland Sweetwater Grapes, Dymond Peach, Pine-apple, Nectarine, &c. Mr. MITCHELL, gr. to J. W. FREMING, Esq., Romsey, had the best four dishes, Madresfield Court Grapes, Dymond Peach, Pine-apple, Nectarine, and Melon; Mr. CROSSMAN was 2nd. Mr. MITCHELL had the best three bunches of Black Hamburg Grapes, fine in every respect; Mr. T. W. GREAVES took the 2nd prize. Mr. MITCHELL also had the best three bunches of White Muscats, the Rev. T. GREAVES taking the 2nd prize. Any other white was Buckland Sweetwater, which won the 1st prize for Mr. Smith, gr. to W. A. TODD, Esq.; the Rev. T. GREAVES came 2nd, with Foster's Seedling. The best three bunches of any other variety of black Grape was Madresfield Court, also from Mr. MITCHELL; Mr. C. COOPER, gr. to W. McADAM SMITH, Esq., coming 2nd, with Black Alicante. Melons were represented by several fruits. The best dish of Peaches was very fine Sea Eagle, from the Frome Fruit and Flower Company; Mr. MITCHELL came 2nd, with the same variety. Some fine Apricots were staged, mainly Moor Park. The 1st prize went to Mr. F. M. NEWTON. The best dish of Nectarines was Pine-apple, from Mr. KIDLEY; Lord Napier came 2nd, staged by Mr. J. WEBBER, Dunster Castle Gardens.

Pears were sparingly shown, and of poor quality. Jargonelle and Citron des Carmes were the best. Plums were few and late in ripening. Cherries were represented by good Bigareau, Napoleon, and Morello. The best dessert Apples were Beauty of Bath, Irish Peach, and Gladstone. Currants, red and white, were fine; and many varieties of Gooseberries were staged. Kitchen Apples were plentiful, the leading varieties, Lord Suffield, Peasgood's Nonsuch, Warner's King, and Ecklinville.

Vegetables were not so fully represented in the open classes as we have seen them, but in the cottagers' tent they were very numerous and remarkably fine. Mr. T. WILKINS, gr., Henstridge House, won the 1st of Messrs. Sutton & Son's prizes; this appeared to be the principal vegetable class. Major ALDWORTH was 2nd. Potatoes were remarkably good. The class for six dishes brought clean, bright samples of

symmetrical shape. The crowded state of the tents prevented much information being obtained.

Miscellaneous collections were numerous. Messrs. KELWAY & SON, Langport, had one of their remarkable collections of Gladioli and hardy flowers; Messrs. CLIBBON & SON a fine collection of hardy flowers, &c. which they had brought all the way from Manchester; Messrs. E. WEBB & SON, Stourbridge, had hardy flowers and other plants; Mr. J. MATTOCK had charming bunches of Garden Roses; and Messrs. TUPLIN & SON and WEGUELIN, Carnations. Messrs. R. VEITCH & SON, Exeter, had a large and most interesting collection of plants and cut flowers, including many novelties; Messrs. JARMAN & Co., and Mr. B. R. DAVIS, had Begonias and other flowers; Mr. W. J. GODFREY, Exmouth, had Cannas, Carnations, &c.; and there were other smaller exhibits.

MANCHESTER & NORTH OF ENGLAND ORCHID.

AUGUST 11.—The fortnightly meeting of the above society was held in the headquarters, Coal Exchange. *Present*: Messrs. G. S. Ball, Jas. Backhouse, W. Holmes, R. Johnson, H. Greenwood, Thos. Mills (secretary), and P. Weathers.

The Orchids exhibited were few in number, but there was some striking plants, which came from Mr. R. LEDOUX, of West Derby, in the shape of a gorgeous specimen of *Aërides odoratum*, which was named A. Ledouxianum [see p. 134. Ed.] The plant was of gigantic dimensions, showing traces of splendid cultivation, and bore about seventy splendid flower-spikes. The committee awarded this plant a Silver Medal. Messrs. CHARLESWORTH & Co., of Bradford, sent *Oncidium ornithorhynchum album*, carrying four well developed flower-spikes, First-class Certificate: and a plant of *Cattleya calummata*, which received an Award of Merit. Mr. S. GRATRIX, Whalley Range, sent a fine hybrid *Cypripedium*, named C. × Olivia, the parents of which are C. tonsum × C. concolor. The flower is of good size and well-proportioned, with a similarity to C. × Antigone, and C. Aphrodite in colour and marking, First-class Certificate. Mr. G. W. LAW-SCHOFIELD, Rawtenstall, sent a very pretty *Odontoglossum crispum*, which is flowering from a newly-imported scrap of a plant. The great feature of this flower is the lip, which is almost one mass of rich chocolate-brown. The committee desire to see it again when it has been cultivated, before making an award; judging from what could be seen of the flower on the day of showing, it promises to be one of first-rate quality. Mr. E. J. SIDEBOTHAM, Bowdon, sent a well-flowered plant of *Cattleya speciosissima*. Mr. O. O. WRIGLEY, Bury, staged a splendid form of *Cypripedium Harrisianum* superbum, undoubtedly one of the finest forms of this old hybrid in cultivation, Award of Merit. Mr. T. STATTER, Stand Hall, showed *Cypripedium* × *Excelsior* (Harrisianum superbum × *Rothschildianum*), a very distinct and good hybrid, Award of Merit; also C. × Numa, which also received an Award of Merit; *Cypripedium* insignis, called "Green-bank var.," peculiar for its flowering at this season, and certainly a charming form, of good size, inclined to be somewhat yellowish, the spots on the dorsal sepal are small and uniform, crowned by a small mass of tiny violet spots, Award of Merit. Mr. J. RICHARDSON, Hale, Altrincham, showed a well-grown and flowered plant of *Cattleya Dowiana aurea*, which received a Cultural Certificate. P. IV.

THE EDINBURGH WORKMEN'S FLOWER SHOW.

AUGUST 13.—This show, the president of which is the Rt. Hon. Mitchell Thomson, Lord Provost of Edinburgh, was held in the Corn Exchange Grass Market, Edinburgh, on the above date.

The full official announcement deserves insertion here, as lucidly setting forth the age and scope of this very useful and successful society. From this it appears that this is the thirty-fourth annual exhibition of plants, belonging to the working classes of Edinburgh, grown at windows, or in small garden plots, back-greens, area-gardens, &c. Fully 400 prizes were awarded. The show was open from 1 to 8 o'clock: admission from 1 to 3, 6d.; from 8 to 8, 1d. Deep interest was taken in the show, and especially in the distribution of the principal prizes, which, in the absence of the Lord Provost, were ably and genially distributed by Professor Geddes. Among others on the platform were Mr. and Mrs. D. T. Fish, Councillor John Harrison, Mr. R. Morrison (the treasurer), and Mr. George Brodie (the secretary). Mr. Fish, in moving a hearty vote of thanks to the subscribers, spoke hopefully of the power of horticulture in the sweetening and ennobling of the home and the life. The usual votes of thanks were then proposed to the committee of management, the various officials, and to Professor Geddes, for so ably presiding over the meeting for the presentation of prizes.

SHIRLEY AND SURROUNDING DISTRICT GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT.

AUGUST 15.—The monthly meeting of the above Society was held at the Parish Rooms, Shirley, Southampton, on the above date, when Mr. W. F. MAYOSS presided over a rather thin attendance of the members.

J. H. Aldridge, Esq., M.D., gave a very useful and interesting lecture on "Farm and Garden insects, and their relation

to Flowers and Crops," illustrated with lantern slides. Mr. R. Beck assisted the lecturer with a number of beetles, being one stage in the existence of some of the insects dealt with. Mr. Beck, in a few strong remarks, contrasted the usefulness of the American Bureau of Agriculture with our own Government Department, in the former case, free advice being given on any question of crops, land, or insects, in any one of the States, quite free of costs except postage. Hearty votes of thanks were accorded to the lecturer, to the exhibitors, and to the chairman at the close of the lecture.

SHROPSHIRE HORTICULTURAL.

AUGUST 17, 18.—The annual exhibition of the Shropshire Horticultural Society was held on the above dates in the Quarry Grounds, Shrewsbury. The opening day was remarkably fine, and a splendid exhibition was made.

Plants, and especially the group classes, were much as usual—they can hardly be excelled. Mr. CYPHER again won the class for the large group of miscellaneous plants, with an arrangement that may be well described as a work of art, and Mr. EDMONDS' 1st prize exhibit in an equally extensive group of ornamental foliage plants was equally or more remarkable. We have not seen a group containing better cultivated specimens than many of the *Acalyphas* and other species shown by Mr. EDMONDS.

Fruit was shown in abundance, and the quality of almost all of it was magnificent. There were upwards of 320 bunches of Grapes in the exhibition, and some of these were more than remarkable—they were extraordinary. Muscats and other first-rate varieties were splendid, and among the 2nd class varieties we have never seen better Duke of Buccleugh and Gros Guillaume. Collections of fruit, Peaches, Nectarines, Apricots, and other kinds were capital. The decorative dessert table, and the garden produce classes were judged on the point value system, and the prizes in each case amounted to what the point value of each exhibit was worth. Thus the difference between the money value of the 1st and 2nd prizes is supposed to be commensurate with the difference in merit of the two collections. Cut flowers were shown in quantity, and the non-competitive exhibits from the trade helped to increase considerably the display in the six tents.

Vegetables were good, and the tent that was filled with the cottagers' productions in fruits, flowers, and vegetables, bore evidence to the interest taken in gardening by many of the cottagers.

The Hon. Secretaries, Messrs. Adnitt and Naunton, again demonstrated how smoothly the arrangements of a large exhibition may be made to run.

PLANTS.

Groups.—For the best miscellaneous group, in and out of bloom, arranged for effect, occupying a space of 300 square feet, Mr. CYPHER, of Cheltenham, was well to the fore, with another of his characteristic light and tasteful combinations of flowers (both of choice and commoner things) and of foliage, which blended so well one with the other. A graceful plant of *Phoenix rupicola* was used as a central object, being flanked on either side by four well-grown examples of *Humea elegans*. Light Palms and *Aralias*, *Fraxinea ramosa*, *Liliums* on single stems, graceful *Oncidiums*, and finely-coloured *Cattleyas*, made up a splendid group, in conjunction with very bright plants of the choicest *Crotons*. The 2nd prize was well won by Mr. FINCH, of Coventry, whose group as a whole was even brighter than Mr. Cypher's; but the effect was not so light, the rustic cork used being a little too much displayed. The plants here were also finely grown, *Ixoras* and *Crotons* being used with telling effect. Mr. Roberts, gr. to Miss WRIGHT, of Helston Hall, Coventry, showed an admirable group for the 3rd prize, the ground-work of dark green moss, however, made it a little too sombre in appearance.

In the class following, and of similar dimensions, but composed of foliage plants only, Mr. EDMONDS, gr. to the Duke of St. Albans, Bestwood, Notts, was fairly in advance of Mr. CYPHER, to beat whom redounds to the credit of any exhibitor. Mr. EDMONDS is well-known for group exhibition, but on this occasion he fairly surpassed himself with a group which has scarcely ever been equalled, and certainly never surpassed. Every plant was used so as to be seen with advantage, whilst the groundwork was beautifully undulated. The most notable features were the finely-coloured plants of *Acalypha musaica*, the tallest of which were fully 7 feet high, and well clothed to the base, each plant with one stem only; highly-coloured *Crotons* and *Dracenas*, with dwarf *Caladiums* and *Begonias*, added to the effect, which was further enhanced by the light and graceful *Bamboos*, *Casuarina* (sp.), and *Palms*. Mr. CYPHER, who came in 2nd here, had a group of similar arrangement to his premier one in the former class, omitting the flowering plants. *Crotons* were here used with telling effect, the blending of other plants with the foregoing being excellent, the groundwork being rich with choice little stove plants. The 3rd prize was awarded to Mr. FINCH, who was apparently unable, for want of sufficient material, to finish his arrangement so well as he would otherwise have done.

Specimen Plants, &c.—An additional class, and a most commendable one, was on this occasion included in the Shrewsbury schedule, viz., one for thirty stove or greenhouse plants, limited to 10-inch pots, not fewer than twelve to be in flower. Mr. Lambert, gr. to Lord HARLECH, Brogyntyn, Oswestry, staged an admirably grown group of choice and well chosen subjects; of the flowering plants he had profusely flowered dwarf examples of *Ixora* in choice kinds, and others of *Dipladenias*, equally as good. The foliage plants were chiefly of *Crotons* and *Dracenas*, with *Phormium varie-*

gatum, Alocasia Sanderiana, Heliconia illustris, and some clean Palms. Mr. CYPHER, who was 2nd, had as his best plants Ixoras and Allamandas in variety, with Phenocoma prolifera Barnesi and a good Erica, with two bright plants of Statice intermedia, his Crotons, Dracaenas, and Ferns being likewise good.

For twenty specimen stove and greenhouse plants, not fewer than twelve to be in flower, Mr. CYPHER was invincible. He has rarely staged a group of plants of similar merit. The flowering plants were Phenocoma prolifera Barnesi, a dense plant in profuse flower and well coloured, being some 5 feet across; two splendid plants of Statice profusa and S. intermedia, the latter much the better as regards colour; three superb Ericas, viz., E. Austriana, E. ampulacea Barnesi, and E. Irbyana, a trio of the best autumn Heaths; two very fine Ixora macrothyrsa, with dense, brilliant, and huge trusses; two Bougainvilleas, B. glabra and B. Cypheri, with a good Allamanda nobilis and Clerodendron Balfourianum. Of foliage plants he had three immense plants of Kentias at the back in the best of health, a large plant of Latania borbonica, and four well-furnished specimens of Crotons, viz., C. Sunset, C. angustifolius, C. Chelsoni, and C. Queen Victoria, all being brilliant in colour. Mr. FINCH was awarded a 2nd prize in this class, his best plants being Sobralia macrantha nana, well flowered; Rondeletia speciosa major, with some good Ericas and Ixoras.

For a single specimen stove or greenhouse plant, Mr. CYPHER was once more to the fore with a large well-flowered example of Erica Austriana, very fresh and bright; and Mr. FINCH 2nd, with Erica Marnockiana, smaller, but good; and Mr. LAMBERT 3rd, with Dipladenia amabilis, also well flowered.

With six plants, not fewer than four in flower, Mr. LAMBERT repeated his previous success, showing large well-managed plants of Ixora Williamsi and I. Pilgrimi, with a capita Allamanda Hendersoni, and a very good Dipladenia amabilis, also a grand plant of Croton Warreni, in quite a small pot, and Kentia Belmoreana.

For six plants in another similar class, Mr. Innes, gr. to G. BURR, Esq., Oaklands, was 1st, with medium-sized plants.

Other Plant Classes.—Small Pelargoniums, six varieties, 1st to Mr. MYERS, florist, Sutton Lane Nurseries, Shrewsbury, for an excellent exhibit, the plants dwarf and bushy, well clothed with foliage, and bearing immense trusses of flowers. Mr. BATEMAN, Abbey Foregate, Shrewsbury, who was 2nd, had a capital half-dozen.

Zonal Pelargoniums (doubles), six varieties, 1st to Mr. MYERS, who had similarly good plants to those in the preceding class; 2nd to Mr. A. BATEMAN, with another worthy half dozen.

Dracaenas, six varieties.—1st to Mr. Bird, gr. to Mr. WATKINS, Shotton Hall, Shrewsbury; 2nd to Mr. LAMBERT, both having vigorous plants, but scarcely up to the mark in point of colour.

Table plants, twelve varieties.—1st to Mr. EDMONDS, with light and pretty examples, well furnished down to the pots; 2nd to Mr. A. Hall, gr. to J. C. WATERHOUSE, Esq., Prestbury, Macclesfield.

Orchids, six varieties.—1st to R. C. Townsend, gr. to Col. R. T. LLOYD, Aston Hall, Oswestry, with a capital exhibit for the season, the Cattleya gigas, C. Mossii, and C. Mendelli all being fresh and good. 2nd to Mr. Steventon, for Cypripedium Parishii and C. barbatum nigrum.

Glazinias, twelve plants.—1st to J. PARSON-SMITH, Esq., the plants dwarf, with finely-developed flowers in good selections of colour.

For a collection of thirty plants in pots not exceeding 5 inches diameter.—1st to Mr. Townsend, gr. to Col. R. T. LLOYD, the best being Cattleya gigas, Cypripedium Rothschildianum and C. Charlesworthi, with 2nd to Mr. Birch, gr. to Mr. WATKINS, Shrewsbury.

Fuchsias, three varieties.—1st to Mr. ALBERT MYERS, with dwarf plants, freely flowered, and in small pots; 2nd to Mr. BATEMAN, with plants not so freely flowered.

Fuchsias, three varieties (smaller).—1st to Mr. Walford, gr. to Mr. WACE, College Hill, with capital decorative plants; 2nd to Mr. BATEMAN.

Begonias (Tuberous), six varieties.—1st to Mr. DAVIS, Yeovil, Somerset, who had only double varieties of his own select strain, the plants extremely dwarf and sturdy, with flowers equal to a Hollyhock in size; 2nd to Mr. Jones, gr. to A. M. BARBER, Esq., Wellington.

Coleus, four varieties.—1st to Mr. A. MYERS, for grand plants, averaging 5½ feet high, and 3 feet through, of close pyramidal shape, and well coloured; 2nd to Mr. Steventon, gr. to Mr. J. H. SLANEY, who had good plants.

Caladiums, six varieties.—1st to Mr. Sawley, gr. to Mr. DARBY, Adcote. They were good plants, but of the older kinds.

Ferns, Exotic, six varieties.—1st to Mr. Edward Jones, gr. to A. M. BARBER, Esq., Wellington, who had four finely-grown Adiantums amongst others.

Group of 150 square feet, open to the County of Salop only.—1st to Mr. Tugwood, gr. to T. F. KYNNESELEY, Leighton Hall, Trowbridge, for a light arrangement, in which Eulalia japonica was used to good effect, but the ground-work was hardly complete, being bare; Mr. C. ROBERTS, who was 2nd, had a pretty group, which was deficient in flower, otherwise it would have run the other very close; 3rd to Mr. Bremmell, gr. to H. H. FRANCE-HAYHURST, Esq., Overley, Wellington, whose group was rather overcrowded, otherwise very pretty and tasteful.

FRUIT

As usual at the great Shrewsbury Show, which is always held in August, the display of fruit was splendid. We noticed no particular kind as being in any sense weak.

Decorative Fruit Class.—The class for a decorative dessert-table has been a feature at Shrewsbury for several years past, and a pretty one also. The table is 10 feet by 4 feet 6 inches. This fruit-table may be decorated with cut flowers and foliage-plants, but decanters, wine-glasses, electro-plate, &c., are excluded. The greatest number of points, 124, was obtained by Mr. J. McINDOE. His floral decorations consisted of two tall glasses, a central epergne furnished with Carnations, Montbretias, and Acacias, &c., and a few smaller glasses. He had four bunches of Grapes, one of Chasselas Napoleon, one of a new Grape, named Black Duke, a seedling from Gros. Guillaume crossed with Duke of Buccleugh; also Muscat of Alexandria, and Madresfield Court. There were two Melons, one of McINDOE's Best of All, and one of Yorkshire Beauty. His Spencer Nectarines were very highly coloured, and Pineapple, Nectarines, Stirling Castle Peaches, also Pears, Apples, and Figs, were all commendable.

Mr. J. H. Goodacre, gr. to the EARL OF HARRINGTON, Elvaston, obtained 119 points.

Garden Produce Class.—This is a class for the best arranged exhibit of garden produce on a space 8 feet by 4 feet 6 inches; any foliage may be employed for decoration. There were six dishes of fruits and six dishes of vegetables. The best show was made by Mr. J. H. GOODACRE, who obtained 102 points. He had two very large bunches of Barbarossa Grapes, and two of Muscat of Alexandria; also a good Melon, excellent Peaches and Nectarines, Apples, Tomatos, Cauliflowers, Beans, Peas, Potatos, &c. Mr. J. McINDOE was the next best in the class, winning 90½ points; he had excellent Muscat of Alexandria and Madresfield Court Grapes, Peaches, splendid Plums, Nectarines, Melons, Tomatos, Celery, &c. Mr. T. WILKINS, gr. to the Lady THEODORE GUEST, Henstridge, Blandford, obtained 90½ points, and Mr. S. BREMMELL 8 points.

The best collection of fifteen dishes of fruit, in not fewer than fifteen varieties, was from Mr. J. H. Goodacre, gr. to the EARL OF HARRINGTON, Elvaston, Derby. He had Muscat of Alexandria, Gros Maroc, Canon Hall Muscat, and Alnwick Seedling Grapes, two rice Melons, and Queen and Cayenne Pines; also Lord Napier Nectarines, Royal George Peach, Moor Park Apricot, Brown Turkey Figs, Transparent Gage Plum, Williams' Bon Chrétien Pear, and Lady Sudeley Apples. The fruit, including Grapes, was of first-class quality. The 2nd prize was taken by Mr. J. McINDOE, gr. to Sir J. W. PEASE, Bart., Guisboro', Yorks; and 3rd, Mr. J. EDMONDS, Bestwood Gardens, Notts.

The winner of the class for a collection of nine dishes of fruit, Pines excluded, was Mr. J. Jones, gr. to Mrs. F. MEED, York House, Malvern, who had very fine Madresfield Court Grapes, excellent Peaches, Nectarines, Figs, and Apricots. The 2nd prize was well won by Mr. BANNERMAN, gr. to Lord BAGOT, Blithfield, Rugeley; and Mr. A. McCulloch, gr. to W. F. WEBB, Esq., Newstead Abbey, Notts, was 3rd.

The best nine dishes of fruit, open to Salopians only, was from Mr. CHAS. ROBERTS, gr. to Miss WRIGHT, Haleson Hall, Oswestry. The Apricots, Nectarines, Peaches, and Grapes were the best dishes. 2nd, Mr. J. Langley, gr. to the Rev. F. M. BULKELEY OWEN, Tedsmore Hall, West Felton, whose Madresfield Court Grapes were remarkably good in size of bunch and berry. 3rd, Mr. S. Bremmell, gr. to H. H. FRANCE-HAYHURST, Esq., Overley, Wellington. There were six exhibitors.

The best four bunches of black Grapes, in two varieties, were Black Hamburg and Madresfield Court, from Mr. J. CAMPBELL, gr. to C. M. NEWTON, Esq., Mickloover Manor, Derby. The long, rather thin bunches of Madresfield Court had excellent berries and high finish. Black Hamburg had likewise capital finish. 2nd, Mr. J. LANGLEY, who had Black Hamburg, and fine large heavy bunches of Gros Maroc. 3rd, Mr. G. DAVIES, gr. to Rev. F. ALDERSON, Welsh Frankton. There were eight exhibitors.

The best four bunches of white Grapes were from Mr. J. CAMPBELL, whose Canon Hall Muscats were magnificent in colour and size of berry; his other variety was Muscat of Alexandria. An excellent 2nd was Mr. T. Lambert, gr. to the Right Hon. Lord Harlech, Brogyhydy, who had very large Muscats, but of less finish, and first-class bunches of Foster's Seedling. The 3rd prize was taken by Mr. Alex. Kirk, gr. to J. T. LATON, Esq., Norwood, Alloa, N.B., who had immense Duke of Buccleugh and Muscat of Alexandria. There were four other exhibitors.

The class for two bunches of Black Hamburg Grapes was won by Mr. J. CAMPBELL in fine style, and he was followed by Mr. D. Airdrie, gr. to J. H. N. GRAHAM, Esq., Stirlingshire, and Mr. J. Jones, gr. to Mrs. F. MEED, Malvern. There were fourteen exhibitors.

Madresfield Court Grapes were shown best by Mr. J. JONES; Mr. J. CAMPBELL was 2nd, and Mr. L. Barlow, gr. to F. R. TREMLOW, Esq., Market Drayton, 3rd. There were other exhibitors.

Black Alicante in two bunches from Mr. J. LANGLEY were especially fine in size of bunch. Mr. F. BANNERMAN beat Mr. A. H. Hall, gr. to J. C. WATERHOUSE, Esq., Macclesfield, for 2nd place.

The best Gros Maroc were extra large-berried bunches from Miss J. CAMPBELL, and those from Mr. A. KIRK, who was 2nd, were hardly less good. 3rd, Mr. J. LANGLEY.

Muscats from Mr. W. Pilgrim, gr. to Sir J. MAYRICK, Bart., Redorgan, were long bunches of moderately finished berries.

The 2nd prize went to Mr. J. CAMPBELL, and the 3rd to Mr. J. Skitt, gr. to Mrs. H. BRIGHT, Ashfield, Liverpool.

The "Any other white variety" was won by Mr. A. KIRK, who had extraordinary bunches of Duke of Buccleugh, the berries being uncommonly large, but not exceptionally well finished.

The "Any other Black Grapes," open to Salopians only, was won by Mr. J. LANGLEY; and the same exhibitor won for two bunches of Black Hamburgs; also a local class.

Mr. T. Lambert, gr. to Lord HARLECH, had the best two bunches of Muscats, open to Salopians only.

Mr. W. Dawes, gr. to Lord TREVOR, Brynkymalt; and Mr. F. Tugwood, gr. to T. F. KYNNESELEY, Esq., Ironbridge, had also 1st prizes in local Grape classes.

Peaches.—There were thirteen entries for the best six Peaches and a dish of Barrington, the fruits being large and well coloured, from Mr. J. BOWERMAN, gr. to C. H. HOARE, Esq., Basingstoke, who was 1st. Mr. W. IGGULDEN, Frome, Somerset, was 2nd, with extra large Sea Eagle; and 3rd, Mr. J. H. GOODACRE.

The best six Nectarines were from Mr. J. Howard, gr. to Sir R. SUTTON, Bart., Newbury, who had intensely coloured fruits of Pine-apple; 2nd, Mr. J. BOWERMAN, with Pine-apple; and 3rd, Mr. C. Crooks, gr. to the Dow. Lady HINDLIP, Droitwich. There were thirteen exhibitors.

The best six Apricots were from Mr. R. Goodacre, gr. to F. BATES, Esq., Whitfield, who had Early Red; 2nd, Mr. J. GOWARD, with the variety Moor Park; and 3rd, Mr. C. CROOK. There were twenty-four exhibits in this class, and many of them were excellent.

Plums.—Mr. J. McINDOE had the best dish of green or yellow Plums, showing Early Transparent Gage; Mr. J. LANGLEY, with Transparent Gage, was 2nd; and 3rd, Mr. J. HOWARD, with Magnum Bonum.

In the class for Purple or Red Plums, Mr. J. H. LANGLEY beat Mr. DAVIES, gr. to W. E. KING, Esq., Leominster.

The best green-fleshed Melon was Sutton's Hero of Lockynge, from Mr. W. Pilgrim, gr. to Sir GEO. MEYRICK, Bart., Anglesey. There were fifteen exhibitors.

The best scarlet-fleshed Melon was shown by Mr. J. Durnell, gr. to R. L. KENYON, Esq., Oswestry, the variety being unlabelled.

The best dish of Cherries was shown by Mr. J. H. GOODACRE, and there were eleven other exhibitors.

Apples, Pears, and Plums were shown in four classes, open to the county of Salop only, and considering the date of the season, the exhibits of culinary and dessert fruits were admirable.

VEGETABLES.

These were excellent, the Potatos especially, and the number of exhibits, as usual, was large. The collections in the special prize classes were all that could be wished; and, indeed, as fine as we suspect could be shown in any country in Europe. Below we have given particulars of some of the principal classes; but there were also others, including a number of single-dish classes, for prizes offered by Mr. R. SYDENHAM.

In Mr. ED. MURRELL's special class for twelve varieties, the best exhibitor was Mr. R. C. Townsend, gr. to Colonel R. T. LLOYD, Aston Hall, Oswestry. He had very fine Onions, Cauliflowers, Tomatos, Pears, Cucumbers, and Potatos; Mr. J. Robinson, gr. to R. W. D. HARLEY, Esq., Brampton Brian Hall, was 2nd.

For Mr. MURRELL's prizes for a collection of six kinds, Mr. J. Abbott, gr. to Mrs. GUISE, Hadnall, was the best exhibitor.

MEASRS. FRITCHARD & SONS, Shrewsbury, offered prizes for the best twelve dishes of Potatos, and the winner, Mr. J. COOKE, Corner Farm, had a collection that worthily won 1st position.

The best bunch of nine autumn Onions was from Mr. G. Risebrow, gr. to Col. KENYON SLAYER, Shifnal, and Mr. B. Ashton, gr. to the EARL OF LATHOM, Ormskirk, was 2nd.

Mr. G. Lye, gr. to Mrs. KINGSMILL, Newbury, beat all competitors for a bunch of spring-sown Onions, and was followed by Col. KENYON SLAYER.

The best six Turnips were from T. B. WOOD, Esq., Ludlow, and the best six Carrots from Mr. T. WILKINS, gr. to Lady THEODORE GUEST, who had Sutton's New Red Intermediate. Mr. R. LYE, who had Tender and True, won 1st prize for six Parsnips.

Celery was good for the present date, and the best was from Mr. J. ABBOTT.

Cauliflowers were, as usual, of capital quality. Mr. J. Birch, gr. to Mrs. WATKINS, Shotton Hall, had the best three Carters' Autumn Giant.

Scarlet Runner and French Beans were shown in considerable quantity, and, as usual at Shrewsbury, the general quality was high. The same may be said for the Peas. Mr. B. ASHTON had the best dish of these, and Mr. POPE, gr. to the EARL OF CARNARVON, Highclere Castle, Newbury, was 2nd.

There were fifteen pairs of Cucumbers, the best being from Mr. R. LAWLEY, gr. to Mrs. DARBY, Adcote, who had Sutton's Peerless.

The best dish of Tomatos was an excellent type of Perfection, and was shown by Mr. A. H. HALL.

In the Potato classes quite a number competed for the prizes for five dishes; and the best collection was from Mr. B. ASHTON. He had Sutton's Al Reliance, Duke of York, Mrs. Breeze, and Veitch's Prolific. The 2nd prize went to Mr. A. H. FORDER, gr. to Col. W. CORNWALLIS-WEST, Ruthin Castle.

Mr. J. J. BREWIN won in the class for three dishes, showing Mrs. Breeze, a coloured kidney; Cigarette, a nice cooking round white ; and International. Mr. C. J. Waite,

gr. to Sir P. TALBOT, Glenhurst, Esher, was 2nd. Mr. Waite had also the best single dish of Potatoes in Sutton's Windsor Castle, a very excellent half-dozen tubers.

The winner of Messrs. Carter & Co.'s 1st prize for a collection of twelve distinct kinds was Mr. W. POPE and Mr. C. J. WAITE was a capital 2nd, whilst there were four other collections.

In Messrs. Sutton & Sons' class for nine kinds, there were six prizes offered, and it was Mr. W. POPE who had the honour to beat the rest of the competitors. The quality left nothing to be desired, and Mr. R. LYE, who was 2nd, and Mr. J. BOWERMAN, who was 3rd, may also be complimented on the quality of their exhibits. There were nearly a dozen competitors in this class, and the produce was a most important feature of the vegetable section.

Mr. J. BIRCH won 1st prize for a collection of eight kinds in a class in which the prizes were offered by Messrs. Jones & Sons, Shrewsbury, and there were several other exhibits.

Messrs. Webb & Sons, Stourbridge, offered prizes for a collection of vegetables in eight kinds, and for a dish of certain varieties of Tomatoes. The 1st position for the collection was won by Mr. J. BOWERMAN, and he was followed by Mr. W. POPE and Mr. R. LYE.

The best collection of vegetables in competition for prizes offered by the Ichthemie Guano Company, Ipswich, was from Mr. H. HUXTER, gr. to T. B. WOOD, Esq., Henley Hall, Ludlow, who won also the similar class for fruit.

Mr. J. McINDOE had the best four Melons in the class subscribed by the With's Chemical Manure Co. Hereford.

CUT FLOWERS, DECORATIVE CLASSES.

For six bouquets and six baskets with plants, Ferns, and cut foliage, in unison (a new and an instructive class) there were three competitors, and the prizes amounted in the aggregate to £37 10s., with a Silver Cup in addition to the 1st Prize. Messrs. PERKINS & SON, Coventry, were (as anyone may surmise) well to the front, winning the 1st prize with a surpassingly fine display. In the arrangements Orchids predominated, but other flowers were used with good effect. A bridal bouquet was composed chiefly of *Odontoglossum crispum* and *Pancreatium fragrans*, with Lily of the Valley. A basket of similar design, but with *Frailea ramosa* and *Pancreatium*, stood beside it, and beautiful it looked. In a bouquet the prevailing tints were yellow and brown, and here again a basket was in evidence with similar tints and colours. Another bouquet was made of *Epidendrum vitellinum*, *Ixora* and *Odontoglossum crispum*. To accompany this there was a basket of similar tints; whilst in another case *Cattleya gigas* prevailed, with the yellow *Oncidium flexuosum*, and *Dendrobium Phalaenopsis Schroderianum*. The whole exhibit having evidently been well thought out. The 2nd prize in this class was awarded to Messrs. JONES & SONS, Shrewsbury, who had a beautiful display, but not so much varied as the preceding exhibit. *Cattleyas* were here used profusely, so also was *Dendrobium Phalaenopsis Schroderianum* with *Oncidium varicosum*. Preference here was given to *Asparagus* almost entirely, whereas a few full coloured fronds of *Adiantum cuneatum* would have added to the effect. The 3rd prize was awarded to Messrs. JENKINSON & SON, Newcastle, Staffordshire.

Ball Bouquet and Bridal Bouquet.—1st to Messrs. PERKINS, who showed in their usual style; in the last named of these two bouquets, *Oncidium papilio* was used most effectively. 2nd to Messrs. POPE & SON, of Birmingham, who also had two good examples, spoiled, in one instance, by using *Cypripedium Lawrenceanum* inverted instead of erect.

For two similar Bouquets, without any Orchids in their composition, Messrs. JONES & SON were easily 1st, showing two pretty arrangements.

One Bouquet of Cactus Dahlias, with any kind of foliage.—1st to Mr. W. TRESEDER, Cardiff, who had a most beautiful example made only of one variety which in itself supplied two tints, the centre of the flowers being pale lemon yellow, with the outer petals deepening to pale terra-cotta, a very pleasing combination; the foliage used being *Asparagus plumosus*. 2nd, to Messrs. POPE & SON, who had a darker coloured arrangement, being made of *Bertha Mawley*, some of the flowers being too large, but the whole was well finished.

Bouquet of Sweet Peas only, with any kind of foliage.—Messrs. POPE & SONS were 1st with an arrangement of soft colours, white and pale pink with bronzy fronds of *Adiantum rubellum*. Messrs. PERKINS & SONS, who were 2nd, used brighter colours with good effect.

Bouquet of Roses only, with Rose foliage.—Messrs. PERKINS & SONS were 1st with a charming arrangement, very light and tasteful, the prevailing tints being the apricot of William Allan Richardson, with a pale yellow Tea-scented variety; 2nd, to Messrs. POPE & SONS, who depended chiefly upon Catherine Mermet, but with good effect.

Button-holes and Sprays, six of each.—Messrs. PERKINS & SONS won here again with appropriate arrangements, not too large or too heavy, and being extremely tasteful in design. Messrs. JENKINSON & SON were 2nd, with a good selection which, if they had not been so much crowded together, would have shown to better advantage.

Single Stand of Cut Flowers.—1st, to Mr. LOVATT, with a pretty display of Sweet Peas only, easily beating other stands in which Orchids, &c., owing to bad arrangement, did not appear to advantage. 2nd, Mr. F. H. NORRIS, Handsworth.

OTHER CUT FLOWERS.

Collection of Stove and Greenhouse Cut Flowers.—1st to Mr. B. CROMWELL (gr. to T. SUTTON TIMMIS, Esq., Cleveley Hall, Liverpool), who had a very superior exhibit of huge bunches

of *Lapageria rosea* and *L. r. alba*; similar ones of *Ixora coccinea* (extra fine), *Dipladenia Brearleyana*, and *Gloriosa superba*, being likewise good; 2nd to Mr. McDONALD (gr. to G. H. KENRICK, Esq., Edgbaston), in whose box *Ixora macrothyrsa* and *I. Westii*, were extra good.

For Six Bunches in a similar Class, the 1st prize was again won by Mr. CROMWELL, with another excellent display; whilst Mr. McDONALD was again 2nd.

Roses, twenty-four single blooms—1st to Messrs. D. & W. CROLL, Dundee, who staged an extra fine box, the best blooms being Mrs. J. Laing, Her Majesty, Etienne Levet, The Queen, and Marie Van Houtte; 2nd to Messrs. HARKNESS & SONS, whose box, when notes were taken, looked the better of the two, the finest flowers were Mrs. John Laing, Comte Raimbaud, and Duc de Rohan.

Dahlias, cut blooms.—For twenty-four show and fancy vars.—1st, to Mr. M. CAMPBELL, High Blantyre, whose flowers, although of full size, were of excellent quality, fresh and bright in colour; the best were Colonist, Virginal, Willie Jarrett, and Norman. 2nd to Mr. MORTIMER, whose flowers were smaller, but good, and of distinct colours.

Messrs. JONES & SONS, Shrewsbury, in very severe competition, obtained 1st prize for a collection of Cactus Dahlias to fill a space of 5 ft. by 4 ft. The blooms were first rate, and though fewer in number than those in the 2nd prize collection from Mr. M. CAMPBELL, High Blantyre, N.B., showed to better effect. 3rd, Messrs. KEYNES, WILLIAMS & Co., Salisbury. There were several other competitors.

For twelve show and fancy vars.—1st to Mr. H. STODDARD, Florence, Longton, a good exhibit; 2nd to Mr. Seabury, gr. to Rev. L. M. BULKELY OWEN, Tedsmore Hall.

Six bunches Cactus in vars.—1st to Mr. James DAVIS (gr. to W. E. KING-KING, Esq., Bodenham Manor, the variety Delicate, being the best; 2nd to F. W. SHARPE, Esq., Twyford, and Mr. KEEBLE.

Pompons, twelve bunches, distinct.—1st to Messrs. KEYNES, WILLIAMS & Co., Salisbury, who had an admirable exhibit, the best being Lillian-Phoebe, Whisper, Emily Hopper, and Bachus; 2nd to Mr. M. CAMPBELL, whose flowers were too large.

The best collection of Carnations and Picotees shown in sprays with their own foliage and without collars or other supports was from Messrs. LAING & MATHER, Kelso, N.B. In this exhibit the blooms were very large, full, and brightly coloured, and whilst they were disposed in the best of taste, the bamboo stands being very suitable to the purpose. Among the varieties could be noticed many of the newest and most choice. Mr. M. CAMPBELL, High Blantyre Nurseries, N.B., who was 2nd, also showed very well, and Messrs. THOMSON & Co., Sparkhill, Birmingham, were 3rd.

The best collection of Gladioli sprays (Nurserymen) was from Messrs. HARKNESS & SONS, Bedale, Yorkshire. Plants and other garnishing were permitted, but beyond some sprays of *Gypsophylla paniculata* which were laid over the surface of the boxes, not any appeared in the 1st prize exhibit. The Gladioli, however, were large, bold and of excellent quality. 2nd, Messrs. WALLACE & Co., Colchester, and 3rd, Mr. W. F. GUNN, Olton, Birmingham.

There was considerable competition in the class for Mr. ECKFORD's prizes for Sweet Peas, there being nearly a dozen exhibits. The 1st prize was worthily won by Mr. A. BESSELL, 1, High Street, Ludlow. The blooms in this exhibit were first rate in quality, and in their disposition the best taste was evident.

The best six bunches of Gaillardias were from Messrs. HARKNESS & SON, Bedale.

The best twelve Carnations or Picotees, three blooms of each, were from Mr. A. W. JONES, Handsworth, Birmingham and Messrs. THOMSON, Spark hill Nurseries, Birmingham, had 1st prize for twelve Picotees. The exhibits in either instance were very good.

The best twelve Sprays of Carnations, distinct, were from Messrs. LAING & MATHER, Kelso-on-Tweed, who had very fine varieties, and the blooms and grass too were good.

Mr. J. DAVIS (gr. to W. E. KING-KING, Esq., Bodenham Manor) had a capital collection of twenty-four Asters.

Mr. Eckford's Challenge Cup, for thirty six varieties of Sweet Peas, to be correctly named, was splendidly won by Dr. C. H. C. SANKY, Boreatton Park.

The best collection of Dahlia blooms, any varieties, upon a space 10 ft. by 5 ft., shown with natural foliage and buds (Nurserymen) came from Mr. W. TRESEDER, Cardiff. This collection redounded to the credit of the Welshmen, the Pompons, singles, show varieties, and Cactus were of capital quality. Mrs. W. Noble, among the Cactus; Thomas Keith, Whisper, and Guiding Star, among the Pompons; and Beauty's Eye, single-flowered, were conspicuous. 2nd, Mr. M. CAMPBELL, and 3rd, Messrs. KEYNES, WILLIAMS & Co., Salisbury.

The best collection of tuberous rooted Begonias as cut flowers or plants, was a collection of plants from Mr. B. DAVIE, Yeovil Nurseries. Stella, salmon pink double Thunderer, double scarlet, Ajax, double crimson, Royal Sovereign, beautiful tint of yellow, Klondyke, double yellow, and Mrs. Nichols, pretty pink, were conspicuous varieties in this fine exhibit.

NON-COMPETITIVE EXHIBITS.

Messrs. PRITCHARD & SONS, Shrewsbury showed a magnificent collection of seedling border Carnations in upwards of eighty sprays, some of which were composed of as many as thirty blooms. Messrs. PRITCHARD & SONS had also a large group of Ferns, for the most part consisting of choice varieties of the better known species. The plants though small, were good and representative.

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, made a pretty display of cut flowers. *Gladiolus Gandavensis* hybrids, many beautiful varieties of *Montbretias*, Lilies, border Carnations, Gaillardias, &c., were noticed. Of the fifteen varieties of *Montbretias* shown, *Gerbe d'Or* yellow; *Etoile de Feu*, scarlet; and *flore pleno*, a double-flowered variety, were conspicuous. The exhibit was backed by capital spikes of *Tritoma* and other fine flowers.

Messrs. F. SANDER & Co., St. Albans, had a group of choice and rare plants, in which the showy *Acalypha Sanderiana* was again very effective; several *Nepenthes*, a nice plant of *Dendrobium bigibbum*, *Cattleya Gaskelliana*, and an immense clump of *Dracena Sanderiana* were principal feature.

Mr. Peter Blair, gr. to His Grace the DUKE of SUTHERLAND, Trentham Hall, Staffordshire, exhibited blooms of a new border Carnation named Trentham Rose. It is a clear rose colour, apparently of very free habit, moderate size, and does not burst its calyx. (First-class Certificate.)

Messrs. H. CANNELL & SONS, Swanley, Kent, treated the Salop people to a view of some of their lovely Cannas, which were staged in the spacious marquee in which the large groups were arranged. The best varieties were well represented, and a very gorgeous group of plants was the result.

THE JADOO COMPANY, Ltd., had a group of stove and greenhouse plants in pots, growing in the Jadoo Compost.

Messrs. R. SMITH & Co., Worcester, upon the ground-floor, made a display of hardy herbaceous flowers, intermixed with ornamental plants in pots. *Arundo Donax* and some other sub-tropical plants were included in this interesting exhibit.

Mr. ALBERT MYERS, Sutton Lane Nurseries, Shrewsbury, had a group of Zonale *Pelargoniums* in pots, also sprays of same. They represented very fine varieties, and were well-grown specimens.

A large exhibit from Mr. J. H. WHITE, Worcester, contained *Crotons* and other stove plants, also greenhouse species and hardy plants, including *Gladiolus* sprays, &c.

Mr. H. DEVERILL, Banbury, showed a grand lot of herbaceous perennial cut flowers, and Mr. JOHN FORBES, Hawick, N.B., had blooms of Cactus and show Dahlias, also Carnations of the various sections, *Pentstemons* and other plants.

Messrs. W. J. BIRKENHEAD, Fern Nursery, Sale, Manchester, made one of their well-known and popular exhibits of choice species of Ferns.

From Messrs. E. WEBB & SONS, Stourbridge, came bunches of hardy flowers, a collection of plants in flower illustrative of their Excelsior strain of *Gloxinias*, also tuberous-rooted *Begonias*, in pots, Sweet Peas in sprays, and a few good vegetables.

Dahlias were shown by Mr. S. MORTIMER, Rowledge Nursery, Farnham, Surrey, who had nine dozen very fine blooms of Cactus, and show varieties.

Mr. ED. MURRELL, Portland Nursery, Shrewsbury, had a group of cut Roses, representing such popular varieties as Mrs. John Laing, Marchioness of Londonderry, &c., also some of the prettiest Noisettes.

Mr. B. R. DAVIES, Yeovil Nurseries, had a group of fine tuberous-rooted *Begonias* in pots.

Mr. H. PATTISON, Cherry Orchard, Shrewsbury, exhibited blooms of *Violas* and *Pansies*.

From Messrs. R. HARTLAND & SON, Lough Nurseries, Cork, came a collection of blooms of tuberous-rooted *Begonias*.

Mr. HENRY ECKFORD, of Wem, Salop, as might be expected so close to his home, showed a collection of his beautiful varieties of Sweet Peas, and a Gold Medal was awarded him for them.

Messrs. JARMAN & Co., Ltd., Chard, Somerset, showed good vegetable, especially Potatoes and Onions, and in addition a quantity of Dahlias and other flowers.

Mr. WILLIAM SYDENHAM, Tamworth, had a display of *Viola* blooms put up in sprays, and Messrs. HARRISON & SONS, Leicester, a collection of Broad Beans.

Messrs. DICKSON, Ltd., Chester, staged a group of miscellaneous plants, including specimens of *Cupressus macrocarpa lutea*, their new *Cordylus Kippisii*, and *Acalypha Sanderiana*.

Obituary.

JAMES PULHAM.—Many of our readers, and especially those who have had dealings with Mr. Pulham in the capacity of garden architect and constructor of rockeries, waterfalls, lakes, &c., will regret to learn of his death, which took place on Thursday, August 11, at the age of 78 years. The funeral took place at Broxbourne churchyard on Monday (15th). We are informed that the business will be carried on as heretofore under the same title.

GARDENING APPOINTMENTS.

Mr. F. W. CAVILL, for the past two years Gardener at Ainderby Hall, Northallerton, as Head Gardener to J. J. HARRIS, Esq., Derwent Lodge, Papecastle, near Cockermouth, Cumberland.

Mr. CHARLES WILLIAM TURNER, as Head Gardener to Mr. DIX PERKIN, Greenford Green, Harrow, Middlesex.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					10ths Inch.	Ins.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
	Above (+) or below (-) the Mean for the week ending August 13.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 2, 1898.	Below 42°, difference from Mean since January 2, 1898.				
0	1 +	96	0	+ 136	- 228	4 +	160	34.1	34
1	1 +	111	0	+ 94	- 222	2 +	120	15.0	48
2	1 +	118	0	+ 118	- 216	3 -	109	12.4	32
3	1 -	125	0	+ 85	- 207	1 +	101	12.3	39
4	0 aver	124	0	+ 89	- 215	4 -	100	11.6	32
5	1 -	129	0	+ 81	- 243	1 +	92	11.2	38
6	1 +	113	0	+ 129	- 217	5 +	137	23.6	40
7	1 +	127	0	+ 133	- 244	3 +	116	20.2	36
8	0 aver	125	0	+ 135	- 156	3 -	105	16.8	41
9	0 aver	111	0	+ 124	- 168	7 +	146	21.1	38
10	1 +	124	0	+ 218	- 134	7 +	113	20.4	38
*	1 +	142	0	+ 266	- 93	2 +	120	14.0	34

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

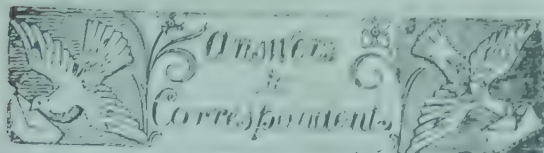
THE following summary record of the weather throughout the British Islands for the week ending August 13, is furnished from the Meteorological Office:—

"The weather was rainy and very unsettled generally during the earlier part of the week, but after Tuesday it cleared up over England, and subsequently over the eastern parts of Ireland and Scotland also; in the extreme west, however, rain continued to fall daily.

"The temperature was, as a whole, slightly above the mean for the time of year, except over the 'Midland Counties,' 'England, S.W.,' and 'Ireland, N.,' where the average values for the week were identical with the mean values for the time of year. The highest of the maximum were registered towards the end of the week, and ranged from 35° over 'England, S.,' 'England, E.,' and the 'Midland Counties,' 83° over 'England, S.W.,' and 'England, N.E.,' and 86° over 'Scotland, E.' and 'Scotland, W.,' to 78° in the 'Channel Islands,' 76° in 'Scotland, N.,' and 74° in 'Ireland, N.,' The lowest of the minima occurred during the earlier half of the week, and were as low as 35° in 'Scotland, W.,' and 39° in 'Scotland, E.,' but exceeded 40° over the greater part of England, and were not lower than 51° in the 'Channel Islands.'

"The rainfall was in excess of the mean except over 'England, S.W.,' the 'Midland Counties,' and 'England, N.E.,' where there was a deficiency. On the extreme west coasts of Ireland the fall was very large.

"The bright sunshine was greatest over the 'Channel Islands' and 'Scotland, E.,' but was slightly deficient over England. The percentage of the possible duration ranged from 54 in the 'Channel Islands,' 48 in 'Scotland, E.,' and 41 in 'England, S.W.,' to 34 in 'Scotland, N.,' and 32 in 'England, N.E.'"



CARNATION FUNGUS: F. G. Burn the affected leaves, and spray the plants with liver of sulphur $\frac{1}{2}$ oz. to 1 gal. of water.

CATERPILLAR: Miss Turner. The caterpillar on the Gloire de Dijon is that of the "Vapourer" moth (*Orgyia antiqua*), now seen so commonly in the streets of London. R. McL.—W. J. L. The caterpillar of one of the Hawk-moths, *Sphinx*. We do not know which.

CRIMSON RAMBLER: G. R. H. We have a good plant on an iron arch, and do not find the iron injurious.

CUCUMBER: J. L. The insects are millepedes, and very injurious. You could trap them with slices of Potato, or scatter some soot on the soil. A. W. C. The appearances seem to indicate eel-worms at the roots, but the material sent is insufficient. The soil is very deficient in manure. M. E. Eel-worms in the root. They abound in the soil, which should be baked before using. Burn the affected plants.

CULTURE OF ODONTOGLOSSUMS: C. W. K. Sphagnum on Odontoglossums. The free growth of the Sphagnum-moss is generally regarded as an indication that the house and treatment are suitable. Up to a certain point it is very beneficial to the plant, but when it becomes so deep and dense as you describe, it is best to clip it back to the original level, i.e., whenever it begins to cover the young growths. Small though the crop may be, it may be used for mixing with fresh potting material. Sphagnum from some localities is very much more inclined to grow in this manner than that from other parts of the country.

CYCLAMEN COUM: H. F. Your roots are not diseased. The roots are storing up food for future use. The flowering period may be delayed, but the plants, if let alone, will multiply. Wait in patience.

"DOUBLE BUNCHES" OF GRAPES: A Constant Reader. The judges at a show would be likely to regard such bunches as deformed, they being two shoulders of the bunch, with the tail-piece missing. No schedule that we know of has a class for double bunches of Grapes.

GLADIOLUS: C. E. and F. W. L. It is *G. cardinalis*, or a seedling from it. We are afraid the yellow spots are the young state of some fungus too young to be determined in its present stage. Send specimens later on.

GOOSEBERRIES: Ribes, Blackburn. You should send fruits and leafy shoots to some cultivator in a large way living in your own neighbourhood. It is not easy to name varieties from fruits only.

GRAPES: Vitis. The berries are badly shanked, and there are some appearance that point to the spot fungus, *Glæosporium laticolor* having attacked them. Shanking is due to many causes. It may be due to over-cropping for several years, which has lowered the stamina of the Vine; to excessive summer pruning; to loss of roots owing to a soured state of the border brought about by the stagnation of the drainage, or the lack of it. In October or earlier you should examine the border, and ascertain its condition, and that of the roots. It may be found necessary to clear out the old soil, and replant the Vines, or plant new ones. When you have examined the border, send us samples of the soil and of the roots. Cut out and burn all berries that have the "spot." Shanked berries must also be removed, being uneatable.

INSECTS DESTRUCTIVE TO IXORAS, CROTONS, &c.: J. Walshaw. The specimens sent are those of the American cockroach, *Blatta americana*, extremely common in the West Indies and the warmer parts of America. They were introduced to your plant-house with Orchids, &c., from those countries. Being at first no larger than ants, their presence is easily overlooked. They may be scared away by strewn powdered borax in their haunts or trapped in bottles sunk in the ground, or ordinary beetle traps, or killed by the various advertised baits.

LEAVES OF THE LIME BLACKENED: W. H. M. The leaves have been attacked by aphid and red spider, which have caused exudation of the sap, and a deposit of sooty matter. We do not find any living fungus.

LILY BULBS DISEASED: H. K. The bulbs are affected with the Lily-fungus, often figured and described in our columns. Burn the affected bulbs, and before planting others next season, spray them with Bordeaux Mixture. The disease is very intractable.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—A. McMillan. The double-flowered variety of *Rosa lucida*, called Rose-button.—A. F. Poa annua.—C. A. B. 1, *Rudbeckia Newmanni* of gardens; 2, *Harpallium rigidum*; 3, *Hemerocallis fulva*; 4, *Campanula rapunculoides*; 5, *Statice latifolia*; 6, *Saxifraga hypnoides*.—W. Thomson. 1, A grass, which we cannot name from the specimen; 2, *Rhus cotinus*; 3, *Cornus sibirica variegata*.—D. L. Specimen quite shrivelled and discoloured. It is probably *Olearia Haasti*.—X. Y. Z. No. 4, *Cattleya Eldorado*, light variety.—F. G. S., Bishop Auckland. *Dendrobium bicameratum*, a curious botanical species, not generally prized by Orchid growers.—M. R. 1, *Valeriana officinalis*; 2, *Alstromeria pelegina*; 3, a shrivelled specimen of *Clematis*; probably a garden form, or a cross from *C. coccinea*.—A Twenty-five Years' Subscriber. *Olearia Haasti*.—Shirley. 1, *Acer spicatum*, so far as we can tell from the leaves only; 2 and 3, *Acer eriocarpum*.—Sir Charles Wager's Maple.—Scottie. *Leycesteria formosa*.—A. L. *Orobanche minor*, introduced with the soil. The plant is parasitic on roots of a variety of living plants. Common in the warmer parts of the country.—E. J. C. *Asolepias syriaca*.—H. E. *Acanthus spinosa*.

PEAR LEAVES: G. M. The leaves are attacked by a mite of extremely small dimensions. We fear there is no cure, but next season you might try spraying with Petroleum Emulsion. The publisher deals with advertisements and financial matters. You should have addressed the editor.

PLUM: Q. R. We do not recognise the fruit, and imagine it to be a local variety. It is similar to the Orleans, but is rather bigger, less sweet and piquant in flavour; but being early, and a good cropper, it is worth looking after as a market Plum.

POPLAR GALL: S. W. E. A gall on the leaf-stalk of a Poplar produced by a gall fly.

ROSE AND LABURNUM LEAVES DISFIGURED: Lexden. Most likely due to the too ardent sun-heat acting on leaves probably wet with dew, rain, or water artificially applied.

SOLANUM: A. C. C. We find nothing the matter with your plant. Perhaps it may be a dwarf variety, if so, it would be useful.

TOMATO: H. The spotting is caused by a fungus *Cladosporium*. Burn the affected fruits, and spray the plants with Bordeaux Mixture, or with liver-of-sulphur, at the rate of $\frac{1}{2}$ oz. to the gallon of water. Avoid spraying the ripening fruits.

VINES: C. B. Carefully read instructions given in this column on "Shanking of Grapes," to *Vitis*. For Grapes to be unripe and green at this date, although started in March, seems to show that the amount of heat applied has been insufficient. Few varieties require more than six months to ripen off their fruit.

COMMUNICATIONS RECEIVED.—C. K. —E. Wrighton.—V. C.—Messrs. Webb & Sons.—R. T.—F. W.—H. C. & Sons.—H. B. M.—L. Sturgeon.—J. Backhouse.—V. P. B.—J. O'B.—H. J. Capon.—E. S.—E. Conner.—W. E. G.—T. T.—C. S.—H. G. S.—G. B. M.—H. T. M.—H. C. & Son.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—E. Wrighton.—W. H. M.—E. H.—H. F.—H. K.—C. E. & F. W. L.—F. W.—R. S.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 27, 1898.

B I C T O N .

THE seat of the Hon. Mark Rolle, is near Budleigh Salterton, South Devon, and has for many years been famous for its success in matters pertaining to horticulture. Its arboretum also is of so complete a character, that to the student in these pursuits there are opportunities for inspection and comparison such as cannot be obtained in any private establishment in the United Kingdom. The number of genera and species now proved to be suitable to the soil, climate, and surroundings of this district is, indeed, large, and fresh additions are constantly being made. The success that has attended these ventures in days gone by is a good guide for fresh attempts in the same direction, and so in every part of this extensive domain plants and veritable trees are flourishing that to the new-comer, as he gazes upon them for the first time, fills him with surprise and increasing delight, for he has always associated the culture of these rare and beautiful forms with protection, such as glass structures afford, and treatment that is not always of the simple greenhouse.

The mansion is a very large and not very handsome brick building, a good portion of which is hidden by the glass erections placed on either side. Standing on high ground, with a broad open lawn in front, the house has a most imposing appearance. Grand views can be obtained of the English Channel, which is here about three miles away. Budleigh Salterton is the most important township in the district, and is a most charming spot, pleasantly situated in a valley facing the sea towards the south-east; it is much sheltered, and has a warm and genial climate. A pleasant terrace-walk faces the sea, whilst the pebbly beach is one of the most remarkable of any part of the south coast; the West Down Beacon, rising some 200 feet above the sea-level is a bold and prominent feature in the place, on which beacon-fires in recent and earlier times have announced to watchers at Haldon and other hills in the southern part of the county the joys of jubilee or of coronation, and in earlier days messages of importance from the sea.

Immediately on entering the Bickton gardens, the first thing to attract attention is the unrivalled avenue of *Araucaria imbricata*. Originally planted about the year 1843, there must have been a bold confidence on the part of master and man to believe these comparatively new and rare subjects would withstand the climate. They were certainly justified in their venture; and ever since the novelty, distinctness, and beauty of this drive in an otherwise purely English landscape, have been expiated upon with intense pleasure.

The avenue is 500 yards long, the number of trees on each side twenty-five, the space between each tree 50 feet, whilst across the drive and grass-space the distance is 38 feet from tree to

tree. A few of the trees have lost some of their lower branches, but many are grand specimens. I enclose a photo of one of the tallest (fig. 40, p. 154), which has attained a height of 55 feet, with branches right down to the ground. The average height of the whole of the specimens is 50 feet. Many of them have stems of considerable size. One recently measured at a foot from the ground, had a girth of just 12 feet.

Passing through this avenue, and turning to the left, we enter the gardens, and close by is the house of Mr. J. Mayne, the courteous and intelligent gardener. As befits a garden of so worthy a proprietor, I must acknowledge, and do so most heartily, that I found everything in the gardens, pleasure-grounds, glasshouses, and arboretum, in a condition that would give satisfaction to the most exacting.

My rambles occupied some hours, the distance traversed being by no means slight. Passing with Mr. Mayne into the glass structures, the first we entered were the Melon-houses: here the fourth crop were well ripening, the fruit being of good size, and beautifully netted. The sorts mostly grown are Sutton's Scarlet, which is exceptionally fine; Masterpiece, and Triumph. Each division as it finishes its fruit is cleaned, and fresh soil and plants are again at work, without any loss of time. In the portion lately occupied by Cucumbers were large numbers of *Calanthe Veitchi*; several pseudo-bulbs are grown in 5 and 6-inch pots; at present they are full of healthy growths, which will shortly be followed by stout pseudo-bulbs producing spikes 3 to 4 feet long. These Mr. Mayne always manages well, and finds their flowers very useful in the winter. The flowers of *Calanthes*, as I know, suffer much in the neighbourhood of large cities and manufacturing centres, fog and smoke together causing the blooms quickly to fade, and bring disappointment, so that many do not grow them as freely as used to be the case; but in Devonshire, as I have proved at Bystock, and here at Bickton, and in many other gardens, the flowers of *C. Veitchi*, when the best varieties are grown, are of an intense colour and unusual size, and retain their freshness right into February and March, it being no unusual thing for *C. vestita*, *Veitchi*, *nivalis*, &c., to be in bloom for a matter of three and four months. The later introductions, such as *Requiem*, *Williamsii*, and a number of others, are naturally later in blooming; and when these can be obtained so as to be grown in quantity, I venture to say that displays will be made down here of which *Calanthe* growers have little conception. Anyhow, *C. vestita oculata gigantea* ought to be obtained, and if treated well, so that its leaves were long retained on the bulb, it would flower with a freedom and vigour right into the spring.

Passing into the vineries, the first house, one with an inside border, had borne a good crop, a few bunches remaining giving evidence of this. Next a house of Muscats, the canes planted five years ago, were carrying a grand lot of fruit. Lady Downe's and Alicantes in another house were equally good. Presently we came to other vineries, and respecting one some interesting particulars were given us. This had been a Peach-house, and as such the trees had done well; but a vinery in the kitchen garden full of Lady Downe's and Alicante though bearing well, could not, on account of the absence of fire-heat, retain its fruit long after ripening, damp and cold caused so many berries to rot, that more than half were useless. It then occurred to Mr. Mayne to exchange the occupants, which accordingly was done five years ago. At the time of this operation the Vines were ten years old, and the Peach-trees several years older, but the removal had so little effect on each, that the next year a few fruits were carried by each Vine and Peach; and since that time they have done well, and borne good crops. The bunches generally hang till about the New Year, when all are cut, and preserved in the fruit-room in bottles, where they keep in good condition till May, and even June, in fact until the first crop ripens. The bunches on these canes just now are superb.

The old Pine-pits now came under notice; here in days gone by fruit in quantity and fine in size was grown. In fact, we have heard of some fruiting-plants being stood outside and the fruit ripened in the open. Well, with sunshine as it was when I took my notes, and a warmth of 90° in the shade the day before (July 17), I do not at all doubt the probability of such finishing process being carried on. At the present time many of the Pines are carrying good fruit, Smooth Cayenne being the variety chiefly grown. A number of others are coming on in various stages; all being grown in and plunged in tree leaves, with just a little litter and tan added to these.

In a portion of this pit a number of young *Crotol*s and *Dracenas* were growing well up to the glass, the pots also plunged in tree leaves; good growth and colour can be obtained here, better than in the stove proper, in consequence of the density of the climbers on the roof of the latter.

In this house were plants of *Dendrobium Phalaenopsis*, *D. chrysanthum*, just opening its golden flowers; *Zygopetalum Mackayi*, *Peristeria elata*, showing flower; *Calanthe veratrifolia*, *Cælogyne cristata*, *Nepenthes* in baskets, &c.; beside the usual class of plants met with in a house of this description. A large *Medinilla magnifica* ought not to be overlooked, nor a grand mass of *Rondeletia speciosa major*, fastened to wires on the roof.

In the frames near by, I noticed a quantity of the double-flowered white *Primula*, just ready for potting into 48's, in which size of pot they will flower during the winter. The cuttings were taken in May and rooted, then stood in the frames, and well they now look; which may be said of the *Poinsettias*. In pits adjoining, some *Cyclamens Butterfly* and *Vulcan* (Sutton's) were robust, and full of healthy foliage. These were raised from seeds sown last August, and having been kept growing, they will by November have formed dense masses. Fine rows outside came into view of the blue and white *Campanula pyramidalis* (Wythes' strain); these are just ready for use indoors. *Salvias*, *splendens*, *Betheli*, and *Pitcheri*, are also in quantity, with a number of the scarlet *S. rutilans*, for spring-flowering; *Libonias*, *Eupatoriums*, &c., and a large number of up-to-date *Chrysanthemums* grown for furnishing large flowers, were looking well. *Montbretias* in pots are found to be very serviceable, and a quantity of them are grown.

In a border close by were quantities of *Carnations* full of flower, among them being the old Clove, Mrs. Reynolds Hole, Raby Castle, Burn's Pink, and numerous others, named and unnamed.

The Camellia-house is just 100 feet long—not a modern erection. A bed runs right through the centre, in which are trees of many years' growth; others are growing in a narrow border at the back, and fastened to wires on the wall, whilst some are planted on the front, and trained up the front rafters and across the roof. So that the house is a perfect archway of shining leaves, with large bushes underneath at all seasons, and it is in the winter and spring a mass of white, scarlet, and striped flowers. At times, a large plant is cut down in order to induce bottom growth, and to give air and light to others, for the specimens having grown so freely, parts of the house are like a thicket. The show-house has on the roof large *Heliotropes*, *Niphetos Rose*, and *Clianthus puniceus*; the stages being gay with zonal *Pelargoniums* *Ballet Girl*, and *Rose of Castille* *Fuchsias*, *Salvia patens*, *Celsia cretica*, *Coleus*, *Trachelium coeruleum*, *Cannas*, and *Hydrangeas*; whilst over all were large plants full of flower, of *Humea elegans*. Here, amongst a few *Odontoglossums*, were several *Masdevallia Harryana*, flowering most freely.

Before entering the Palm-house we passed a wall on which the yellow Banksian Rose has been established for years, and every spring produces a most abundant lot of flowers. Adjoining this is a large plant of *Magnolia fuscata*, then blooming, its deliciously scented flowers betraying its presence.

The Palm-house is a large structure of glass and iron, in which were large Palms, Aroids, and Musas; *Philodendron pinnatifidum* being a very fine plant. Here were two *Areca Baueri* 30 feet high, *Dracena latifolia* very strong; a fine *Caryota* 25 feet high; and

masses of *Alpinia nutans* now in flower. The back wall was covered with Citrons, Guavas, Hibiscus, single and double-flowering varieties; as well as the large-flowering *H. Lamberti*. On the narrow front border were numerous *Streptocarpus*, and *Begonias* of the fine foliage section. On the roof were plants of *Passiflora racemosa*, with numerous scarlet flowers and purple threads; and close by *P. Loudoni* also, with scarlet flowers, just a shade lighter, the threads in this variety being a clear white. Leaving this house, we pass large bushes of *Aloysia citriodora*, *Chimonanthus fragrans*, bearing many seed-pods; *Cassia grandiflora*, *Lonicera semperflorens*, and *Trachelospermum jasminoides*, full of its pure white flowers. *W. Swan, Exmouth.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

VERONICA DIEFFENBACHII.*

WE are indebted to Mr. Lindsay, of Kaimes Lodge, Murrayfield, for a specimen of this very rare *Veronica*. It is a hardy shrub, about 2 feet high, with thick, leathery, oblong-acute leaves (fig. 41). The flowers are in axillary spikes, and of a lilac colour. It is a native of the Chatham Islands.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT DULCOTE, TUNBRIDGE WELLS.

GREAT has been the improvement in this beautiful property, some five acres in extent, and most pleasantly situated on Broadwater Down, during the few years it has been in the hands of Walter Cobb, Esq. The owner is a man of great energy, and with the necessary amount of capital at his command he has carried out improvements about the place in the best manner. In the massive dwelling-house everything that the sanitary-engineer and decorator could suggest as likely to beautify and improve the healthiness of the building has been done, and in the gardens and pleasure-grounds neatness and order everywhere prevail.

The old plant-houses, excellently well built, but in most instances too lofty to accommodate the fine general collection of Orchids which was removed from the old establishment at Sydenham, have been utilised for the stronger and larger-growing species, and for suspending plants near to the roof.

For the *Cattleyas* of the smaller-growing rare species, and for the cool-house Orchids, new houses with all the accessories of extensive rain-water tanks and the best appliances for heating, shading, and ventilation have been arranged, and in these houses the plants are growing luxuriantly. Especially is this the case in the *Odontoglossum*-houses, where plants of several years' growth show increased size in their pseudo-bulbs and flower-spikes. In the first division of the chief lean-to cool-house, with some good examples of the *Pacho* form of *Odontoglossum crispum* in bloom, were several excellent types; also *O. Pescatorei*, *O. cirrhosum*, *Epidendrum vitellinum majus*, which grows at this place to a remarkable size, with very large and healthy foliage, the batch still in bloom having been flowering for the past three months; the pretty-looking *Ornithidium Sophronite*; the singular-looking *Zygopetalum stapelioides*; varieties of *Masdevallia Chimæra*, *M. bella*, and other *Masdevallias*; a number of the somewhat rare *Lycaste leucantha*, carrying a large number of flowers, the sepals of which are of an emerald-green tint, and the petals pure white; the ivory-white *Lycaste Cobbiana*, *Cochlidia Noezliana*, *C. vulcanica*, and *Sophronitis grandiflora*. In this house varieties of *Cypripedium insigne*, viz., *Wallacei*, *violaceopunctatum*, and *Chantini* grow very strongly, their

broad green leaves, in some cases, having a resemblance to those of *C. Rothschildianum*.

In the next division the front stage is filled with plants of *Odontoglossum crispum*, an importation of this year; but with pseudo-bulbs already plump and furnished with stiff, broad foliage, and in some few instances flower-spikes were remarked with sufficient flowers upon them to show that the varieties were worth retaining.

A noteworthy feature in the culture of the *Odontoglossum* here is, that crocks in the pots are dispensed with, and good drainage is secured by placing the rhizomes of bracken and rougher parts of the peat used in the bottoms of the pots. The plants so potted are light, and the method is said to be in every way preferable to the old method. At the end of the house, and on the highest part of the back staging, is a fine collection of species which Mr. Howes finds to grow well together, viz., *Odontoglossum Edwardi*, *O. ramosissimum*, *Oncidium zebrinum*, *O. macranthum*, *O. serratum*, and others of that class, which grow to



FIG. 40.—*ARAUCARIA IMBRICATA* IN THE GARDENS OF THE HON. MARK ROLLE, BICTON. (SEE P. 153.)

very large proportions, and most of them flower for the greater part of the year, the roof being partially covered with their flower-spikes. In the same house the specimens of *Cattleya citrina*, *Oncidium Forbesii*, *O. Marshallianum*, and *O. crispum*, are growing grandly—one large specimen of *O. crispum grandiflorum* having seven leading growths. From end to end of the houses, along the front, a rain-water tank is fixed, and beneath the back staging varieties of *Begonia rex* are planted, which grow to a very large size, and possess very handsome foliage.

In the smaller *Cattleya*-house are grown rare varieties of the showy *Cattleyas*, and suspended overhead a nice batch of *Cattleya aurea* with a few good *C. x Hardyana*, and one of a grand variety of *C. x H. Massiana*; also a small batch of *Lælio-Cattleya x Hippolyta*, of which the one certificated as *L.-C. x H. Dulcote* variety is by far the best. The small house situated at the end contains some good *Lælia purpurata* in sheath, and of *L. crispa superba*, and a few others in flower; also a batch of plants of the blue-flowered *Dendrobium Victoria Regina*, some of which had expanded flowers.

Taking the remaining Orchid-houses in succession, we noted in the first a capital lot of plants of deciduous *Dendrobiums* finishing up their growth, and with these a few sturdy ones of the rare *Oncidium bifolium*. To this succeeded a tall span-roofed house containing a fine lot of *Vanda Sand-riana* suspended from the roof, and growing splendidly, notwithstanding the fact that in winter the temperature is often as low as 50° to 55° Fahr. Here, also, are some plants of *Coelogyne Dayana*, with immense growths, and a number of plants of different species of *Phalaenopsis*. The next house, which is of similar construction to the last contained *Vanda suavis* and *V. tricolor*, with some *Cymbidiums*, including *C. Traceyanum*, on the centre stage; and on a shelf a good collection of *Miltonias*, and a very vigorous plant of *Pescatorei cerina*, which recently bore fourteen flowers; also a fine batch of *Epidendrum Wallisii*, and in flower some good examples of *Sobralia xantholeuca*, *S. leucoxantha*, *S. macrantha*, *Epidendrum O'Brienianum*, and some superb forms of *Oncidium Kramerii*. On a shelf near the glass in the next house were some fine masses of *Cypripedium niveum*, *C. bellatulum*, and others of that section, and suspended overhead were *Coelogyne cristata maxima*, *C. c. alba*, and other varieties; while in a shady corner stood a fine specimen of *Phaius tuberosus* with a dozen leading growths, which has had to be shifted from house to house several times before the present very suitable spot was found. The *Cypripedium*-house contains the best species and varieties, and "weeds" are rigidly excluded. On one side we noted a quantity of the pure yellow *C. insigne*, principally *C. i. Sanderae*, one of the specimens of which bears fourteen leading growths; and with these were *C. x Chapmani*, *C. x Gertrude*, *C. x Chas. Rickman*, *C. x Leysonianum*, *C. x Anna Louise*, and most of the best *C. bellatulum* hybrids. Of his own crosses, *C. x J. Howes*, a fine hybrid of *C. Sallieri*, Mr. Cobb thinks the best of its class; and his two newest acquisitions, *C. x P'Ansoni* and *C. x Mrs. Reginald Young*, both of which have secured First-class Certificates, are among those that he most cherishes. Many of the plants are now in bloom, and the house at this season is very showy. *C. Parishii*, a plant which formerly had thirteen flower-spikes, is still in bloom, as are some plants of *C. Curtisii*, *C. Stonei*, &c.

Passing an interesting array of seedlings, we came to a range of intermediate-houses, which hold a good show of *Lælia anceps*, of which there are several true *L. Amesianas*; some well-bloomed plants of *Zygopetalum maxillari*, *Oncidium curtum*, *Brassia Lawrenceana longissima*, *Lælia superbiens*, *Epidendrum Capatianum* and other *Epidendri*; *Cattleya Loddigesii* and other *Cattleyas*, &c. Other Orchids grown in quantity, and in fine order, were *Dendrobium Jamesianum*, *Miltonia Roezli*, *M. vexillaria*, and various species of *Anguloa*.

In the other plant-houses were many showy plants, well grown; in the open ground a grand lot of *Chrysanthemums*, many beds of *Carnations*, and other flowers, and on the outskirts of the lawn some splendid *Conifers*, from 30 to 50 feet in height. *J. O'B.*

THE PRINCIPLES AND PRACTICE OF PRUNING.

(Concluded from p. 134.)

AS regards the detailed pruning of a tree, this must be taken in hand at two periods of the year, viz., in the winter and the summer. In the former season the most important part of the operation must be performed, viz., that dealing with the older wood, with the training of the parts of the tree, and the more careful and accurate preparation for fruit-formation; for more can naturally be done during the dormant condition of the tree, when the sap is at rest, than during the summer, when life is active. In the summer it is more a question of general thinning-out, or suppression of the redundant green twigs, which have sprung up everywhere on the tree, as a result of the vigorous summer activity of the latter, which, throwing off the restraint of cultivation, tends to revert to its original ancestral condition.

* *Veronica Dieffenbachii*, Bentham, in *D. C. Prod.*, 8, and in *Hook. Fl. N. Zealand* (1843 to 1845).—Fruticosa glaberrima; foliis lineari oblongis subobtusis, basi parum angustatis amplexicaulibus; racemis axillaribus folio longioribus glabris; sepalis lanceolatis acutis, corollæ tubo brevioribus; capsula ovoidea sub-acuta, calyce sub-triplo longiore. Chatham Islands.

The following observations are concerned only with general principles, and will not usually, therefore, distinguish between winter and summer-pruning, the main features of each of which have respectively been stated above.

There are various of the more detailed processes in pruning which require really more knowledge, care, and tact than the untrained practitioner would at first imagine. For instance, in pruning-back a main lateral branch, this should always be effected close above a lower eye or bud, for the outgrowth from

from the latter will not only be considerably diverted from its right direction of growth as an even continuation of the mother-branch, but, as a result of this, will not draw the sap in such full and sufficient quantity to the fruit developing all along the whole branch. For it is obvious that along a straight or evenly-curved branch the sap will be more even in flow and more unchecked in quantity.

I have stated above that in the case of our hardy fruit-trees trained to walls or espaliers, it is dangerous to shorten the lateral branches, as this induces the

with the finger and thumb at a point near the base so as to leave them still attached and hanging from the injured portion. In this way they for a time draw a portion of the sap, which prevents the buds below from bursting forth, and yet does not detract to any appreciable extent from the supply of sap to the fruit spurs on the mother-branch. These hanging twigs at length gradually wither up, when they can be easily pulled off. If, however, the nipping of these green twigs takes place towards the end of the summer, say at the end of July or August, the likeli-



FIG. 41.—VERONICA DIEFFENBACHII: FLOWERS OF A LILAC COLOUR. (SEE P. 154.)

the latter, which is to form the continuation of the branch, will not tend so much to spoil the general curvature of the branch as would an outgrowth from an upper eye, for the cut surface immediately above its origin would be more quickly covered, owing to the fact that the tissues increase in thickness more rapidly on the upper than on the lower surface of a shoot, and thus the even continuity of the new outgrowth with the branch would be the sooner established. Moreover, the reason why it is always, in the case, at least, of these main branches, advisable to prune to an eye, lies in the fact that if a dead stump of wood be left beyond an eye, the outgrowth

production of too many woody twigs; this rule applies in a general way to all trees, but is less to be regarded in the case of pyramids, standards, &c., as attention has in these latter to be paid to the acquisition of the proper form, when some shortening of the lateral branches is inevitable; but this shortening partakes usually only of a slight character. But where shoots which are nipped or cut off low down, as in the vigorous green tertiary shoots formed in summer, are liable to break out again very shortly, and perhaps with as great vigour as before, it is advisable, though involving a little more time and labour, not to remove the shoots at all, but to twist them

hood of their again shooting out will not be so great (except in a wet season), for the activity of the sap's movement and the general vigour of the tree have passed their maximum, and a gradual decline of the life-energy has set in. Yet it is probably the better plan to undertake the summer pruning and training early on in the season, say in May or June, for the superabundance of green twigs being removed and the branches trained as far as possible into their proper positions, the sun, air, and rain-showers will have freer access to the tree all through the summer, which will be a most important factor in the formation of good fruit the same year, and in the ripening

of wood for the production of fruit the ensuing season.

As it is a fact that no two branches of a tree are alike in character, but that some are more vigorous in growth or more fertile than others, it follows that each branch must receive its own peculiar treatment, and that the same treatment must not be applied to all alike, as if the tree were a mere machine, for in a tree, as in everything else, true unity is always constituted by variety in its separate parts. If a branch is too rank as compared with the others about it, that is to say, if it tends to produce too much wood at the expense of fruit-spurs, its vigour must be diminished. This may be done either by leaving it entirely unshortened, so that the sap at length exhausts its exuberance in the natural manner throughout the length of the branch, with the result that the surrounding branches again equal it in strength, or the effective measure may be adopted of bending the too vigorous branch out of the perpendicular or obliquely-ascending plane into the horizontal, or, in the case of many wall or espalier trees, out of the horizontal into an obliquely-descending position, so as to induce the shoot to grow towards the ground. The more horizontally-inclined or decumbent is the direction of growth of a shoot or branch, the less vigorous will inevitably be its growth. In a horizontally-growing branch, for instance, the leafy twigs, instead of being more or less radially disposed around a branch as in an upward-growing shoot, will appear on the upper side only, where the fullest amount of light is to be obtained, and consequently the sap will be drawn principally to the upper side of the branch, resulting in a lop-sided development of the latter (a transverse section of the branch showing its upper side to possess a much thicker layer of wood than the lower); this uneven distribution of the sap and consequent one-sided development of the branch must result in a retardation of the growth in length of the branch and of its general vigour. The natural course of the sap is upward, and when this course is in any way disturbed or thwarted, weakness of the organ concerned must ensue. Hence, wall and espalier-trees with horizontally-trained boughs will be less vigorous in vegetative growth, and therefore adapted to produce finer fruit, than pyramids and other forms with ascending boughs, and, to take an illustration from our forest trees, the "weeping" varieties will always be found to be less vigorous than the type form. So that in Nature there are very few instances of plants with perfectly horizontal or "weeping" vegetative branches, for this is an unnatural and, as I have shown, a mode of growth unfavourable to the attainment of true vigour and the fulfilment of the proper life-functions.

Another method of reducing the rankness and strength of a branch is that of making in the lower part thereof a deep transverse incision reaching as far as the inner and older layers of the wood; in this way a considerable portion of the area of the pathway of the sap being interrupted (this pathway lying chiefly in the younger layers of wood), the nutrition and, consequently, the vigour of the branch will be very much lessened; but the incision being only on one side of the branch the sap will continue to flow, though in diminished quantity, through the branch, and after a time the wound will heal.

If, in an unfruitful branch, it is desired to induce the formation of fruit-spurs from dormant eyes, this may frequently be done by making an incision in the stem immediately below the eye, reaching as far as the wood but not penetrating the latter, or by entirely removing a circular area of the cortex all round the branch at that point; this practice is founded on the well-known fact that the elaborated sap containing the organic food substances, such as the sugars and proteids, assumes a descending course through the cortical and bast-tissues of the plant; these tissues, therefore, being removed below the eye which it is wished to force into a fruit-bearing twig, the substances above-mentioned accumulate here in great quantity, and cause the sprouting of the eye.

The same practice may be applied when it is wished to increase the size or improve the flavour of fruit

already in process of development, the incision being made below the fruit-spur on the mother-branch. It is to be noted that in these instances the ascending sap is quite unaffected in its course, the wood being left quite undisturbed.

Conversely, to those branches of the tree which are lacking in the necessary vigour, the process of shortening must be applied, as also the nipping off of the fruit-forming buds, and in this way the production of more woody growth will be induced, and a spur to greater vegetative vigour be given. Here again, the method may be applied of making a deep incision into the younger wood on one side of the main stem of the tree, just above the insertion of the branch which it is desired to strengthen; by so doing a portion of the ascending sap will be interrupted at that point and diverted into the branch, increasing thereby its nutrition and vigour.

There is a natural tendency in all vertically-growing stems for the upper appendages, as branches or flowers, to develop at the expense of the lower ones; this may be, in some measure, overcome by giving the branch at first a horizontal direction of growth prior to the natural ascending or vertical one.

In order to secure a proper development of the fruit, careful attention must be paid to the tending of the fruit-buds as they form; if the twig on which they appear requires shortening owing to its too woody extension beyond the buds, this must never be done until the buds are considerably advanced in the formation of the floral organs, for if the twig be pruned too early the fruit-buds might be induced to change their mode of growth owing to the great accumulation of watery sap in their immediate neighbourhood, and develop into vegetative shoots instead of into flowers; this, however, will not be possible when once the distinctive character of the organs enclosed in the bud are laid down, and the shortening of the twig will then act beneficially by increasing the quality and vigour of the individual flowers, and eventually of the fruit. I need hardly add that thinning of the buds or flowers will frequently have to be practised where the size of the fruit is a consideration.

In certain forms and kinds of fruit-trees, and by certain cultivators, as in Belgium and France, a systematic rejuvenating process is forced upon the tree, whereby, as the old stem or branches become unfit for fruit-bearing, they are, at the proper time and place, replaced by younger shoots, which themselves, at a future period, are in turn succeeded by others, and so on throughout a long period in the life of the tree. A young lateral shoot is carefully trained exactly parallel with the old one in such a way that at the proper time, when the latter is removed, the former may supply its place and function. By this method of perpetual rejuvenescence, as it were, of the tree, there is no doubt that a larger quantity and a better quality of fruit will be produced in a given time, and superior fruit will be obtainable for a longer period. But the very severe wounding treatment involved in this process must in the long run weaken the vitality of the tree. On the whole, it seems advisable to adopt less slashing and wounding, and more natural methods.

In spite of all that has been said in favour of pruning, many will, no doubt, assert, and with truth, that many kinds of fruit trees, if left entirely to themselves, and which never feel the knife or the support of the wall or espalier, will yet, even when young, produce an abundance of fruit year after year. Nevertheless, while not doubting this statement, the fact remains that, on the whole, and in the long run, trees which are carefully trained and pruned while young, will repay the grower by a more regular and abundant supply and a better quality of fruit than those trees which are left entirely to their own natural devices.

The fact that the old trees of farm and cottage orchards are observed to bear, year after year, an exuberance of luscious fruit of excellent quality is a natural result, firstly, of the probable early training and pruning of the trees when young and easy of manipulation; and, secondly, of the arrival at maturity of these trees when, the acme of their vege-

tative vigour and growth having been passed, and the ultimate natural form and size of the tree attained, this vegetative growth at length, in the fulness of the trees' maturity, has been equalled by that of the reproductive organs—the flowers and the fruit; this process resulting in the striking of an even balance between the two forces mentioned in the opening paragraphs of this article—the vegetative and the reproductive; a return to the more perfect ways of Nature being the result. And such trees in their maturity are always more beautiful to the eye than when, in their younger state, they are under the domination of the knife and the wall. The superior quality of the fruit in such orchard-trees, as compared with the wild crab-trees of a similar shape and mode of growth, and bearing an equal abundance of fruit, is due to their training and pruning when young, and all the other methods of cultivation throughout their life, and to their descent from an age-long cultivated ancestry.

The point more particularly to be insisted on here is that it is during the youthful active vigour of the tree, when the vegetative growth is at its strongest, and when naturally the tree is striving upwards to that maturity of size and form when it will be best fitted for the bearing of fruit, that this natural vegetative vigour must be firmly but judiciously restrained, side by side with other methods of cultivation, in order to the premature production of a superior quality of fruit both in the early and the later periods of the tree's existence; but the tree, having passed a certain age, and beginning to enter on maturity, may be left largely to itself to work out its own salvation in the attainment of an equilibrium between its vegetative and reproductive growth.

W. C. Worsdell, F.L.S.

THE NEW FLOWER GARDENING.

IN order to see the latest departure in flower-gardening, one must go to Regent's Park, where a complete system has been elaborated which includes a nursery in which hardy plants in immense quantities are cultivated; pits and houses for the production of tender plants, and also a store for ripening, drying, and preserving the thousands of bulbs which are used for decoration in early spring.

The principle pursued is to grow a great variety of plants, in large or small quantities as required of the most beautiful of hardy as well as tender plants; the season beginning in early spring, and continuing without interruption till late autumn. There is no waiting for effect, but when a bed is cleared of plants that have become bare of bloom, others in full flower at once take their places. Plants the most unlikely to remove safely are transplanted with no bad effects ensuing, as, for instance, in the case of Hollyhocks, of which an enormous number is cultivated, and all single forms. Some of these were pointed out to me immediately after transplantation, and in full flower, and after a lapse of ten days I again saw them, when they were in splendid condition. In the same way Celosias and Cockscombs that I saw growing in pits had been assorted as to colours and height, and were taking their place in the general scheme of autumn decoration. A large bed of Cannas in full bloom were conspicuous, where previously Pyrethrums were grown, and so the process goes on. In the nursery thousands of the best kinds of Starworts, of *Helianthus autumnalis*, of *Chrysanthemums* and other late flowering subjects, were found growing on, to occupy the position of those plants at present in flower in the garden.

A first inspection of this truly beautiful garden inclines one to at once conclude that its style and the system pursued are unsuitable for private gardens. But an explanation of the details, with a glimpse at the systematic manner in which the work is conducted, forces one to the conclusion that a clever gardener, backed by a liberal master, ought to be able to work out the details of this system with much assurance of success. It is no slight advantage that numbers of gardens are seen by their owners during only a short period of the year, and in such cases labour, which is an important consideration, would be not greatly

increased. While allowing so much, it must, however, be conceded that in general, extra men, extra ground, and a portion of glass set apart solely for the purpose of forwarding tender plants, would need to be provided.

It is, perhaps, unnecessary to refer in detail to all the beds, but only to the more conspicuous. Hollyhocks have already been mentioned. They are exceedingly beautiful, and of these the finest display is provided on a broad border which, with a hedge, divides the garden portion on the east side from the park beyond. Though a number of herbaceous plants, such as Oswego Tea and Rose Willow-herb, and others are interspersed throughout the border, the Hollyhocks are so lovely that they alone attract one's attention. In this and other combinations of a like nature, the Hollyhocks are arranged all over the border, from back to front, and thus it is, that they excel in beauty. A large oblong bed at the north end of the central row of flower-beds, has also Hollyhocks dotted all over it as the chief flowering plant, *Nicotiana affinis* and *Coreopsis tinctoria* filling the interspaces, and near the outer edges these are supplemented by *Heliotrope*, white *Phloxes*, and by a line of white *Marguerites*. Also in a large border bounding a group of shrubs on the west side, large irregular masses of single Hollyhocks are used most effectively. All the plants employed in this border are massed, *Antirrhinums*, *Celosias*, *Michaelmas Daisies*, *Sedum speciosum*, and the glaucous-foliaged *Elymus arenarius* being the more conspicuous. The above is a very effective piece of decorative gardening, and perhaps requires less labour than other arrangements that I noticed. The grouping of the shrubs, moreover, is signally good, and adds here, as in other parts of the grounds, very much to the general effect. Further north, on the same side, an irregularly-shaped bed, lying on a slope close to the junction of two walks, is also arranged in a most pleasing though, perhaps, singular manner. The groups of plants employed are arranged without regularity; they are unequal in height, though none is tall; the colouring is apparently without motive, and yet the effect of the whole is good in the extreme. Some of the plants grouped are *Campanula carpatica*, Chinese Pinks, white and blue *Lobelia* mixed, yellow and red *Nasturtiums*, also mixed in colours; yellow-leaved *Moneywort* trailing over *Stonecrops*, *Chlorophytum elatum variegatum*, rising from a carpet of blue *Lobelia*; *Francoa ramosa*, arranged in the same manner; Iceland *Poppies*, mixed *Verbenas*, mixed *Violas*, and *Echeveria secunda glauca*. A few dot-plants of *Araucaria excelsa*, and a mass of *Campanula pyramidalis*, lend the needed grace to this very attractive bit of uncommon bedding. On a lawn nearly opposite to this bed, one formed of succulents, charmingly arranged, gives a feeling of coolness where all is so very bright and gay.

Of the central groups of flower-beds, that planted with Hollyhocks has already been mentioned. Other beautiful beds include one of oblong shape, covered with *Viola William Neil*, thickly dotted with a rough-looking red *Carnation* named *Albert Durer*—this perhaps wrongly—anyhow, the effect was good. Two beds of tall *Fuchsias* filled in with smaller plants, and *Dactylis elegantissima* and scented-leaved *Pelargoniums*, were also pretty. A large oval bed filled with *Canna Alphonse Bouvier*, among which *Nicotiana affinis* was intermingled, and with a margin of *Marguerites*, gave a grand effect. A corresponding bed planted with an orange-flowered *Canna*; *Cannas* with dark foliage, *Abutilon Thomsonianum variegatum*, and the same edging plants as the last, was very effective. Here also was a very large bed of *Raby Castle Carnation*, with a carpeting of *Viola Mabel*, but in this instance the effect was decidedly tame. Other *Carnations* employed include *Germania*, a very fine yellow; *Miss Audrey Campbell*, not so good a yellow as the last-named; and *Yule-tide*, a dark-red *Clove-scented* variety that showed up well. *Cardinal Wolsey Carnation* was very poor, and is unsuitable for bedding. The same remarks apply to *The Pasha*, which is the least effective of the apricot-coloured varieties. The best of this shade is doubtless *Hampton*, free-flowering, and of a perfect habit of growth. *Hayes' Scarlet*, generally a difficult subject,

was here really very fine, and the colour brilliant; *Alice Ayres*, on the other hand, was dirty-looking. I admired the effect of a circle of double-flowered *Ivy-leaf Pelargonium Abel Carrière*, with flowers of deep rose, and a large bed of one of *Lemoine's* new *Begonia*, *Corbeille de Feu*, which was very striking, the general effect being bronzy-red. *B. semperflorens rosea* was also grown as a carpet plant, and *B. Afterglow*, with *Heliotrope* and *Lobelia* formed a charming combination. In addition to these, notice may be taken of small beds filled with *Montbretia crocosmæflora* and blue *Lobelia*, with *Zinnias* in various colours, with crimson *Celosias*, of various shades, and *Saxifraga hypnoides* for a carpet, with yellow *Celosias* and crimson *Coxcombs* mixed and interspersed with *Dactylis elegantissima* and with *Salpiglossis*.

The large vases were largely filled with *Ivy-leaf Pelargoniums*, supplemented with other flowering plants. All the vases were well done, and the plants with which they were filled in the most luxuriant health. The central group of *Palms* with a vase was delightfully arranged. In addition to these, a feature that must be noticed, is the well-arranged groups of shrubs whose branches in some places sweep the turf, in others they rise from groups of *Hydrangeas* full of bloom, or from among *Saxifrages* that have flowered. There is here a very large plantation of *Bambusa*, including *Arundinacea*, vigorous and doing well. *A. Simonsii*, very fine, and a light green foliaged species in the way of *Phyllostachys nigra*, but which is not known, are very fine. Dot plants of *Palms* of large size, and of smaller groups of *Bamboos*, are placed in position where their full effect can be best seen; while masses of *Polygonums* of most luxuriant growth, add not a little to the good effect of the whole.

Of the brilliancy of the zonal *Pelargoniums*, of the *Calceolarias*, and of many other common plants, it is unnecessary to do more than make mention. These, no doubt, strike one as being very well done, but it is to the uncommon and the surpassingly beautiful arrangements made with plants, some of which have been in cultivation for centuries, but the qualifications of which as decorative subjects have been hidden till now, that our sympathies go out. *B.*

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 79 to 85.)

(Concluded from p. 188.)

7, ENGLAND, N.W.

LANCASHIRE.—Apples are a full crop on the following varieties: *Grenadier*, *Golden Spire*, *Tower of Glamis*, *Ringer*, *King of Pippins*, *Pomeroy*, *Mère de Ménage*, *Dutch Codlin*, *Early Margaret*, *Pott's Seedling*, *Kentish Fillbasket*, *Malster*, and *Irish Peach*. Of *Pears*, *Jargonelle*, *Williams' Bon Chrétien*, *Doyenné du Comice*, *Beurré Diel*, and *Easter Beurré* carry fruits, but the crop is a very poor one. *B. Ashton*, *Lathom House Gardens*, *Ormskirk*.

— The Apple-crop in this garden is a heavy one, but generally in the district there is not nearly an average yield. The owner of an orchard 8 acres in extent, and situate 2 miles from here, assures me that except the berry-trees, his orchard has not been so bare for twenty years. Cold winds, aphids, and other insect pests have each done their share. *Wm. P. Roberts*, *Cuerden Hall Gardens*.

8, ENGLAND, S.W.

CORNWALL.—There was promise of an abundant fruit crop in this district, but during the blooming period heavy rain and hailstorms, accompanied by low temperature, spoilt all chance of a good Apple crop. As usual, the *Codlin* varieties are carrying a moderate crop; so also are *Alfriston*, *Loddington Seedling*, *Bramley's Seedling*, *King of Pippins*, and *Lady Sudeley*. *Pears* and *Plums* on wall-trees are very good. *Peaches* and *Nectarines* are poor, though in sheltered positions some trees are carrying a crop. *Chas. Page*, *Boconnoc Gardens*, *Lostwithiel*, *Cornwall*.

DEVONSHIRE.—In this part of Devon the Apple and Pear crops are very light. There are no *Lord Suffields*, and few *Lord Grosvenors*; *Warner's King*, *Cox's Orange Pippin*, and other sorts are doing fairly well.

The orchard crop, too, is very light. The thin crops may be accounted for by the fact that in 1896 and 1897 there were heavy yields, and last year we had a sunless autumn. *Geo. Baker*, *Membland Gardens*.

— Apple trees in cultivated gardens are carrying clean and good crops, but orchard trees have not so much fruit as the abundance of bloom seemed to promise. *Pears*, *Plums*, and *Apricots* are all that can be desired. *Peaches* promised well, but owing to the cold, sunless May the majority of fruits turned yellow and fell. *J. Mayne*, *Bicton*, *East Devon*.

GLoucestershire.—The Apple-crop in this garden is decidedly the best we have had for some years past. *Pears* bloomed magnificently, but the cold east winds and late frosts had a very prejudicial effect on the crop. *Plums* are a very partial crop; some trees have borne abundantly, while others have none. *Greengages*, *Jefferson*, and *Coe's Golden Drop* on walls are excellent. *G. W. Marsh*, *Arle Court*, *Cheltenham*.

MONMOUTHSHIRE.—There is an average crop of Apples, but the trees in some places are badly infested with blight. *Pears* are fairly good, the following comprising the best: *Williams' Bon Chrétien*, *Madame Treyve*, *Beurré Rance*, *Beurré Diel*, *Winter Nelis*, *Marie Louise d'Uccle*, and *Durondeau*. *Plums* are under average, the severe late spring frosts having had much to do with the failure of this crop. *Peaches* and *Nectarines* on trees against a south wall were very good, and required thinning. *W. F. Woods*, *Llanfrechfa Grange Gardens*, *Caerleon*.

— The following Apples carry good crops:—*Frogmore Prolific*, *Bismarck*, *Queen*, *Betty Gesson*, *Golden Spire*, *Worcester Pearmain*, *Lord Suffield*, and *Newton Wonder*. The most prolific *Pears* are *Durondeau*, *Louise Bonne of Jersey*, *Doyenné du Comice*, *Beurré Diel*, *Easter Beurré*, *Souvenir du Congrès*, and *Jargonelle*. Of *Plums*, *Victoria* is the only variety that carries a good crop. *Thos. Coomber*, *The Hendre Gardens*, *Monmouth*.

SOMERSETSHIRE.—We have had a very fair lot of fruit, and especially small fruits. *Strawberries* have been most abundant, *Royal Sovereign* taking the lead. Apples are a good crop in some instances. The cold winds and sharp frosts injured *Peaches* when the trees were in bloom. *Plums* are good in places. *Thomas Wilkins*, *Inwood House*, *Henstridge*.

WORCESTERSHIRE.—With the exception of *Plums*, the fruit-crops are fully up to the average, and the quality promises to be of a high standard. There has been the most persistent attacks from green and black aphides, which required the constant application of insecticides to repress, involving much labour and attention. Wall-fruit trees look promising, and bush and standard-grown trees have medium crops of healthy fruit. The worst of all our enemies to fight has been the Pear-midge, "*Diplosis pyrivora*," otherwise we should have had very heavy crops of *Pears*. *Strawberries* have been the crop of the season, especially *Royal Sovereign*, *President*, and *Latest-of-All*. *William Crump*, *Madresfield Court*, *Malvern*.

— Taking the fruit-crops on the whole they are quite satisfactory in this district. Apples are a good average crop of clean fruits. *Pears* are not so plentiful, but the fruits are good. *Apricots*, *Plums*, and *Peaches*, although in full bloom at the time of the "blizzard," I never saw set more thickly. The trees were merely protected with a couple of layers of fish-netting. The weather being quite dry at the time made all the difference between success and failure. *A. Young*, *Witley Court Gardens*, *Stourport*.

WALES.

GLAMORGANSHIRE.—The fruit-crop in this district is very disappointing, especially after the exceptional promise in the early part of the season. Apples are very scarce, many of the trees not carrying a single fruit. The most prolific varieties are, *Ribston Pippin*, *Warner's King*, *Dumelow's Seedling*, *Lord Burghley*, and several local varieties. *Pears* are better on the whole than Apples, but large numbers dropped, and some trees have a very thin crop. *Louise Bonne of Jersey*, *Forelle*, *Doyenné du Comice*, *Williams' Bon*

Chrétien, Marie Louise, Pitmaston Duchess, Glou Morceau, and Winter Nelis, are amongst the best. Plums are an average crop and clean. *R. Milner, Penrice Castle Gardens, Swansea.*

MONTGOMERYSHIRE.—There was no frost to injure the trees when in bloom, but all Apples are badly infested with blight, which is causing the fruit to drop. Among Apples our best croppers this season are Stirling Castle, Ecklinville Seedling, Bismarck, Tower of Glamis, Lord Derby, Lane's Prince Albert, Kentish Fillbasket, Pott's Seedling, Early Rivers, Mrs. Barron, and Golden Pippin; among Pears Glou Morceau, Beurré Diel, Marie Louise, Louise Bonne of Jersey, Marie Louise d'Uccle, Beurré d'Anjou, Pitmaston Duchess, Beaurré Superfin, and Doyenné du Comice. Plums are badly blighted, although they promised well. *John Lambert, Powis Castle Gardens, Welshpool.*

PEMBROKESHIRE.—The Apple crop is a failure in this district, owing to very wet, cold weather prevailing during the time the trees were in bloom. Apples on wall-trees have a splendid crop. Pears and Plums are poor, even the common Damson failing with us. The trees bloomed splendidly. *Geo. Griffin, Slebeck Park Gardens, Haverfordwest.*

9, IRELAND, N.

DOWN.—Owing to exceptionally fine weather during the early part of March we have a very good crop of Apricots, but, owing to heavy sleet and hailstorms, the Pear-crop is nearly a failure. Apples are abundant and of good quality. *Ed. Cole, Ballywalter Park Gardens.*

DUBLIN.—Apples and Pears are good, but stone fruits are poor and disappointing. All small fruits have been good excepting Strawberries. The season has been favourable to other garden crops, which are consequently looking well. *G. Smith, Vice Regal Gardens, Phoenix Park.*

LONGFORD.—Small fruits in general have been very good, especially Strawberries. Of these fruits Royal Sovereign cannot be beaten for size, flavour, and abundant cropping. I have many times gathered from ten to twelve fruits that were 1 lb. in weight, some of the individual fruits weighing 2½ ozs. *John Rafferty, Castle Forbes Gardens.*

LOUTH.—During the spring months there were strong easterly winds, with heavy falls of rain and hail. These destroyed the bloom upon Pear and Plum-trees. Strawberries have been very good, especially Royal Sovereign, Noble, and Latest-of-all. The only fault I find with the last-named variety is, that it does not colour well at the point. *Charles Pilgrim, Drumcar Gardens, Dunleer.*

SLIGO.—Fruit has this season turned out very good in this county. I was afraid in the early spring that the weather would ruin the blossom, but it was not so. Small fruits have been much over average, and the quality was excellent. *James E. Dawson, Lissadell Gardens.*

WESTMEATH.—The fruit-crops in this district are all fairly good with the exception of Plums (a total failure), and Gooseberries, which, although of good quality were scarce. Apples are a very fine crop, such standard varieties as Blenheim Orange, Cox's Pomona, and Lord Suffield, being loaded with fruit, and all growth is strong, clean, and healthy. *Robert Anderson, Waterstown, Athlone.*

WICKLOW.—Small fruits have been remarkably good this season, especially Gooseberries. Some of the standard varieties of Apples are bearing a full crop, such as Warner's King, Keswick Codlin, Ecklinville, and Worcester Pearmain; of the newer sorts, Bismarck, Lane's Prince Albert, and Schoolmaster, are carrying large crops of good fruit. *D. Crombie, Powerscourt.*

—April and May were wet and cold months. There were also frequent heavy hail showers, which destroyed the blossoms of early varieties of Apple and Plum trees, and caused the Pear crop to be, on the whole, a poor one. Crops of Gooseberries, Currants, Raspberries, and Strawberries have been extra heavy, and the fruits very large and fine. *James Whytock, Coolattin, Shillelagh.*

10, IRELAND, S.

CLARE.—Apples and Pears are not much grown in his district, and the orchards are neglected. It is a great pity, as Ireland is a fine country for Apple cultivation. *Wm. Clarke, Castle Crine, Six Mile Bridge.*

KILDARE.—On the whole the fruit crop is disappointing after such an abundant promise in spring. This is chiefly due to the severe frost on the night of May 15, followed by frequent east winds. Insect pests have been very troublesome. Apples on exposed trees have good crops, but sheltered trees, even of the same kinds, are nearly fruitless. *Frederick Bedford, Straffan House Gardens, Straffan Station.*

11. CHANNEL ISLANDS.

JERSEY.—The Jersey fruit crop will be a record one this year in point of quantity and quality. Cherry-trees suffered greatly early in June from cold nights, and lightning destroyed hundreds of trees, especially of the Morello. *Edwin John Ashelford, Queen's Road, Jersey.*

ISLE OF MAN.—The fruit crop upon the whole is a good one. Apples showed abundant bloom, but wet weather and hail-showers thinned it very considerably. Pears upon pyramids set badly, but there are immense crops and good fruit upon wall-trees. This has been a record year for Strawberries—heavy crops and fine fruit. *J. Inglis, The Nunnery House, I. of M.*

—The most reliable Apples here are Lord Suffield, Manx Codlin, Cellini Pippin, Keswick Codlin, Hawthornden, Cox's Orange Pippin, Beauty of Kent, Beauty of Bath, and Ribston Pippin. *Joseph Lloyd, The Gardens, Whitehouse, Kirkmichael, I. of M.*

EXPERIENCES IN FIG CULTURE.

It is surprising how large a quantity of fruit a healthy, well-trained and cared-for tree will produce in one season, when grown under glass. The most common method of training is that of fan-shape, and with due attention with regard to regulating, and the preservation of suitable sturdy fruitful growth, a good crop may well be relied upon. The Figs, however, enjoy plenty of extension to be fruitful, and when the room is somewhat limited, the roots must be repeatedly cut, otherwise the wood will grow coarse and soft. At Preston Hall I have repeatedly observed very heavy crops of luscious fruits growing on a tree which has been planted at the back of a lean-to house, and trained first up the back wall, and then in a downward direction to the roof. Whether by this method the tree is more fruitful or not I am unable to say; but one thing I was told—this individual specimen has cropped heavily for some years. Considering the Fig as a first-class dessert fruit, it does not always get the proper attention it deserves. The plants delight in a fibrous, loamy soil, with plenty of chalk or old, dried mortar incorporated with it, and manure-water at intervals if the fruit crop is a heavy one.

Under glass, if some of the young shoots are pinched at the sixth joint at intervals all over a tree, there will be plenty of fruit produced, and which will ripen for a lengthy period. Where Figs are highly appreciated, and there is no space of trellis available, some capital dishes may be obtained from plants growing in pots or tubs. As a rule, when the roots are somewhat confined, the growth is less gross and more fruitful with an annual top-dressing of suitable material. Repotting is not necessary every year; but when this operation must be done, I have found early autumn the best time of any to do the work. Frequently, if the trees are in a healthy condition, the pots will be crammed with strong roots. These balls of roots may be shaved off, and reduced in such a manner as to allow a good portion of fresh soil being rammed tightly round the pots and ball, seeing that the roots are thoroughly moist previous to disturbing them. Although a fairly good crop of fruit may be obtained from pots partially shaded with Vines or Peach-trees, to be highly successful a good position must be afforded the plants. As an all-round Fig Brown Turkey is simply excellent. Bourjassotte Grise, Negro Largo, and White Ischia fruit well in pots. *H. Markham, Margate.*

SHORT NOTES ON BULBOUS PLANTS.

(Continued from p. 136.)

FILICEA ORNATA.—A rare bulbous plant, resembling in its flowers *Hippeastrum vittatum* in miniature; it produces rush-like, channelled leaves, a foot long and a short flower-scape, bearing an umbel of three or four flowers, white in colour, with crimson stripes both inside and outside the segments; it has a small tubular, lobed, crimson corona, with crimson filaments and style, and a white stigma; each flower measures about 1½ inch across. It is said to be quite hardy, but I cannot verify this, the high prices ruling until recently hardly justifying the risk. It succeeds well treated as are *Zephyranthes*.

Griffinia dryades is an interesting and beautiful species of the "Blue Amaryllis." The flowers, about a dozen of which are borne on a stout scape, in the manner of a *Lycoris*, are pleasingly grotesque in appearance. The segments, with the exception of the lower one, are recurved, deep sky-blue in colour with white bases; the lower segment is quite straight and a trifle keeled, inside of which lie the stamens, the upper stamen in the whorl being parallel with the upper segment. This species is closely allied to *G. hyacinthina*, differing only in having pedicellate flowers. Imported bulbs of *Griffinia* are notoriously difficult to establish, sometimes remaining practically dormant for two years in stove temperature. They appear to do best with the same treatment as the *Eucharis* receives, keeping them moderately dry when they incline to rest, and affording a temperature of not less than 50°.

Hæmanthus Kalbreyeri.—This West African species is now flowering with me. It produces an umbel containing a large number of flowers, borne on a stout scape, inclining to a spherical shape, and about 6 inches across. The flowers are of a deep, rich red colour, and bear bristling yellow anthers, which give it a very effective appearance. Unlike the South African *Hæmanthus*, all the flowers in this species are individually displayed to the best advantage, the tips of the segments just touching each other. The bulb, scape, and leaf-stalk are spotted and mottled red. It flowers before making any considerable leaf-growth. It does best in a compost of sandy loam, mixed with about one fourth of its bulk of dried leaf-mould and basic slag in equal proportions; the latter should be fairly coarse. It must be kept dry when the foliage turns yellow, affording water at intervals of a few weeks to keep the soil from leaving the bulbs. Plenty of sunshine, and an intermediate temperature, suit it best while growing, which may be lowered to 45° while at rest. It may be propagated by offsets, or by seed, which should be sown as soon as ripe, disturbing the seedling as little as is possible for the first two years.

Brunsvigia Josephinae.—Of the few decorative qualities *Brunsvigia* possess, *B. Josephinae* may claim the larger share, its flowers being by far the largest and handsomest. The bulbs are about 1 foot long, and 6 inches in diameter, and are clothed with a thick, coarse tunic, resembling weather-beaten roofing-felt. The leaves, which die down before the bulbs flower, are distichous strap-shaped, rough and leathery in texture, averaging 3 to 4 inches wide, and 3 to 4 feet long. The flattened and glaucous flower-scapes are produced from the tops of the bulbs and average 2 feet in length, bearing umbels of from twenty to thirty deep crimson-tinted flowers on long glaucous pedicels, the pedicels partaking of the colour of the flowers for some distance toward the base. Each flower measures 4 inches across from tip to tip of the segments. The three upper segments are much recurved, the three lower ones being slightly depressed at first, but recurving completely as the flower ages. The colour and forms are variable in different bulbs, some showing lighter marbling inside the segments.

The bulbs should be started as winter approaches, in a temperature of 55°, affording plenty of water as the leaves advance, with occasional doses of manure-water, avoiding a very wet soil if the weather is dull and sunless. They should have completed their growth by the following April, and the leaves turning

allow at the tips will indicate this. When this is the case, expose them in the full sun on a shelf, or lay the pots on their sides in a sunny spot under a south wall when all danger from frost is over, allowing them to remain quite dry for two or three months; they may then be placed upon a coal-ash-bed, righting the pots, giving them occasional waterings till the lower-scapes appear. *B. Josephine* is very uncertain in flowering in this country, a very hot summer and very dry resting period being essential to success. The flowers being thick and fleshy, rains do not injure them in the least degree, and they last for several weeks in perfection. *Geo. B. Mallett.*

DIMORPHIC FERNS.

DIMORPHIC plants, or plants bearing two distinct types of leaves or fronds, are extremely curious and interesting, since in them, in one and the same axis of growth, we find the little formative cells constantly changing their minds, as it were, and adopting now one and now another structural plan. Doubtless, in most cases, this must result, or does result, from intermittent reversion in a variety or sport, to

fixed varieties in which only parts of fronds are affected, the medio deficient, or abasipinnula Lady Ferns, to wit, wherein the fronds are normal throughout, except that a few of the pinnules are reduced to thorns or entirely absent; in these, however, every frond is similarly characterised, and the dimorphism, therefore, is confined to the sub-divisions.

More curious cases are those in which the plant, as in our *Polypodium vulgare* var. *elegantissimum*, persistently sends up fronds of two extremely different types, one simply pinnate and perfectly normal, and the other finely cut into long, slender divisions. These diverse characters are not, however, necessarily constant throughout each frond, one or more normal pinnae or even pinnules may appear in a dissected frond, and conversely a single pinna of the other type may be finely dissected, and all the rest normal. This peculiarity is so fixed in this variety that all attempts to breed it out by selection have so far failed, and as we see by that remarkable Fern, *P. Schneideri* (a cross between this variety and the large exotic, *P. aureum*), it crops up in

and an æsthetic party constituting a county council with short tenures of office. In building a long street bit by bit, the rival architects would rule the roast by turns, and the result would be precisely akin, ornate gothic and plain brick and mortar being the picturesque (?) dimorphism evolved from the conflict. Dimorphism in Ferns is in many species associated with their reproductive peculiarities, the barren fronds being leafy, and the fertile ones more or less narrowed and contracted. Profuse fertility in spores is frequently obtained at the expense of leafy tissue; and conversely, very foliose or plumose forms are usually barren, or nearly so. In *Blechnum* and *Lomaria*, *Acrostichum*, and others, the fertile fronds are little more than midribs bearing the spore-heaps and their protective covers. In these cases we have simply a concentration of the reproductive forces in one set of fronds whose different form results therefrom; but even here the little cell architects are sometimes freaky, and in one of our varieties of *Blechnum* (*B. s. anomalum*) they evidently cannot settle between them what fronds shall be fertile, what barren, and so they have come to a compromise by building semi-leafy fronds, with little streaks of sporangia along their centres.

Thanks to the courtesy of Mr. J. W. Barnes, of Levens, the writer has received an extremely curious dimorphic *Scolopendrium*, remarkable even in that protean species for the great difference between the two types of fronds it bears, and the absence of any intermediate stages. Some of the fronds are quite normal except at the tip, where they form a handsome crest; the other fronds are perfectly linear, very long, and about a quarter of an inch wide—a merely ribbed rachis, indeed, with two incipient lobes at the base, and a spreading tassel of narrow segments at the tip. A still more curious feature is the fact that while the leafy fronds are normally fertile, the narrow ones are usually sterile. The two types spring from identical axes of growth, constituting it as thoroughbred a case of dimorphism as one could desire.

I insert here the following note by Mr. W. Marshall, Bexley:—"The accompanying plant is not a seedling, if it had been I should not have been astonished; as facts are, I must confess I am. Some seven or eight years ago I raised a batch of seedlings from a fine form of *S. ramo-digitatum*, or one of its first cousins (the naming of the *Scolopendrium* varieties is now so wonderful that I have given it up. I had a catalogue sent me the other day with six or eight pages of names of varieties, double columns); from among these one plant developed one frond of abnormal width and ramification, but barren, so I cut it off, and potted it up to its points. I got five plants—this is one. It started all right, then ran right out to the normal variety, and now has thrown a frond of var. *crispum*. What the next will be I am anxiously looking forward to."

This is a very singular case of multiformity in one and the same plant. The parent form of *ramo-marginatum* is so extremely distinct from the plumose or *crispum* section, that the latter is the very last form I should expect a sport from it to take; and the conjunction in the specimen of *ramosely-crested* fronds, a perfectly normal one, and a true but slightly *crested crispum* frond, is very interesting. (See fig. 42, taken from Mr. Marshall's plant.)

All cases of bud-variation are, of course, cases of dimorphism *pro tem.*, and subsequent partial reversion creates it again; but except in this case of bud-sports, to which our florists owe so much, dimorphism is hardly acclaimed a virtue by fernists or florists, since more often than not it means inconstancy, and detracts from, instead of adding to, the beauty of the plants. *Chas. T. Druery, F.L.S., V.M.H.*

NURSERY NOTES.

MESSRS. R. VEITCH AND SONS, EXETER.

NUMEROUS uncommon herbaceous perennials have appeared during the present season at these nurseries, which, with others seldom seen, have made the beds



FIG. 42.—A DIMORPHIC VARIETY OF *SCOLOPENDRIUM VULGARE*, RAISED BY MR. W. MARSHALL, BEXLEY.

the ancestral normal type, such variety not being fixed, and hence, just as the seeds vary and yield progeny of differing types, so the initial cells in the plants obey similar impulses, and do the same things. In Ferns the commonest examples are found in those partial sports known to Fern-hunters as "rogues," and in the male Fern these are by no means uncommon, plants otherwise normal sending up fronds which are forked or depauperated in an irregular fashion, as if they were trying to crest, but did not exactly know how. Generally the experienced eye detects this inconstancy, but it has occasionally happened that good hunters have been deceived, so successfully have the "rogues" played the confidence-trick upon them. In other cases, as in the "pulcherrimum" type of *Polystichum angulare*, plants showing the characteristic long sickle-shaped pinnules, which develop prothalli from their points, have been found, only to revert to the normal for years, occasionally, however, throwing out a pinna or two, and rarely a complete frond, as a tantalising reminder of the original prize. In such cases, the varietal forces are clearly latent, depending for their development upon some subtly congenial condition of growth which appears extremely difficult to determine. Dimorphism, too, plays a part in these constant and

a hybrid as it does in all mere crosses. In that lovely Lady Fern, *A. f.-f. Kalothrix*, precisely the same thing occurs in a less marked fashion, glossy, silky, finely-cut fronds being marred occasionally by pinnae or pinnules of a merely plumose type, from which *Kalothrix* originated. A very curious fact, however, occurs in this connection. A somewhat foliose *Kalothrix* has been raised, I think, by Messrs. Stansfield, in which the silky glossiness is preserved, but the cutting is less delicate. In this variety the reverted portions are normal, and not plumose, indicating that the *Kalothrix* form has reverted to the extent of throwing out the first varietal sport into plumosum while retaining the *Kalothrix* cutting of the secondary sport to a large degree. Spores of *Kalothrix* yield two distinct types of plants, the plain plumose type, and the true *Kalothrix*, with its little defects. In this case, as in the previous one of the *Polypody*, the tendency to become finely dissected must be a delicately balanced one, the votes of the architectural cells, so to speak, must be numerically close, so that when some little accident occurs the usual minority gets the upper hand for a while, and varies the plans of the opposition to suit their own taste. Just so could we imagine a common-place party

and rockwork very showy and attractive. I noticed the following when calling at the nursery a day or two ago:—*Eucryphia pinnatifolia*, a hardy shrub, was full of its large white flowers, reminding one somewhat of *Carpenteria californica*: this latter, however, is flowering under glass protection at present. *Ononis rotundifolia*, over 1 foot in height, with branching habit, bearing a quantity of bright red flowers; *Ononis fruticosa*, having flowers of a pink hue. *Lychnis vespertina alba flore-plena*, growing about 2 feet high, bearing large white flowers, which are double, as its name implies—a most useful form for cutting-purposes; *L. officinalis flore-plena*, with bright pink blooms; *Tupa salicifolia*, a most desirable plant for a sheltered spot, growing 4 feet high, and bearing masses of tubular scarlet and yellow flowers; *Helenium grandiceps striatum*—erect grower, about 4 feet high, with orange-coloured flowers striped with crimson; *Rudbeckia laciniata*, growing to a height of over 4 feet, is a useful plant for the back rows in borders, and in lightening up shrubberies—the leaves are prettily lobed, and the yellow flowers are of a large size; *R. pinnata*, with yellow flowers; *Hedysarum multijugum*, a flowering shrub having bright flowers of a purplish-crimson; *Acanthus mollis*, 3 to 4 feet high, bearing spikes about 18 inches long, of white and purple flowers; *Helianthus multiflorus maximus*, with very large, double, yellow flowers; *Statice latifolia*, a fine border plant with very large leaves, and immense panicles of purplish-blue flowers, useful for isolated position on the lawn, and very serviceable for filling vases and for house decoration; *Scabiosa caucasica*, a beautiful perennial, growing 1½ feet to 2 feet high, the flowers, which appear rather late in the season, being about 3 inches across, and of a soft lilac-blue, a most desirable species; *S. c. alba*, a white form of the above. In a rockery, a large plant of *Fuchsia corallina* is full of its bright crimson and purple blooms. *Notospartium Carmichaeliæ*—the New Zealand Broom that bears small, pink-hued flowers, singular looking and interesting; *Androsace lanuginosa*, another plant of singular beauty, which should be so planted on the rockery that its slender stems may fall over the stones—these pendent stems and leaves are coated with white silky hairs, and the flowers of a delicate purplish-rose. *Gentiana asclepiadea* is another pretty species with graceful shoots about 2 feet long, covered with purplish-blue flowers; *Geranium Wallichianum*, blue; *Meconopsis Wallichii*, a stately Indian species, growing 4 to 5 ft. high, very effective when planted as a solitary specimen, where its full beauty may fully develop; the leaves, of large size, are covered with yellow hairs, while the drooping flowers are of a pale blue colour. It prefers a situation where shade and moisture can be assured. *Physostegia virginiana* is a very fine plant, growing 2 feet high, with leaves resembling those of a *Chelone*, its pure white flowers being fine for cutting purposes. Numbers of other interesting plants are still in flower, rock plants, alpine, and herbaceous perennials forming a great feature here.

In beds close by these are numbers of choice *Cannas* planted out, which are just now in full blaze of beauty, among which *Bacchus*, Chestnut Yellow, *Geoffrey de St. Hilaire*, *Königin Charlotte*, *Phœbus*, *Souvenir d'Antoine Crozy*, *Stadtgärtner Sennholz*, are the more showy and free-flowering.

In a tank a number of *M. Marliac's* new Water-Lilies are growing in pots sunk in the water. These varieties have recently been so fully touched upon in these pages, that little further need be said than that every variety is kept in stock; and all are very beautiful.

The stock of Bamboos at this nursery is perhaps the most complete in the kingdom, as far as species and varieties are concerned, and many large specimens are to be seen here. *W. Swan.*

NEW INVENTION.

A NEW HOP-WASHING PLANT.

The old and expensive system of washing Hops by means of hand-pumps is likely soon to become a thing of the past. Mr. R. W. Thomas, of Rodmersham, Sittingbourne, has just invested in a steam-plant, made by Messrs. Merryweather, of London, under Merryweather & Corling's Patent, which, in efficiency and economy of working, is far ahead of any other system yet invented. It consists of a light portable steam-pump, supplying from twelve to twenty-four spray jets through portable iron pipes, with flexible joints and rubber hoses. The whole of the pipes

can be laid down ready for use in half an hour, and the pipes shifted by a few men to various parts of the gardens as required. The first cost is about one-tenth of a fixed plant, and the cost of working is about half that of the hand apparatus, while the steam-plant is also applicable for spraying fruit, corn, and vegetable crops.

THE WEEK'S WORK.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

Hardy Herbaceous Perennials.—These plants are becoming more generally cultivated, and in some gardens are ousting the tender exotics from their place of eminence in the flower-garden. When judiciously employed—that is, not made to fit into the intricacies of a geometrical-garden contrived for “bedding-plants”—their effect is everything that could be desired, besides affording suitable flowers in endless varieties of form and colour for use indoors. They may be planted in wide or narrow borders in round, oval, or oblong beds sheltered from the windiest quarter. The soil that suits most of the species is a rich loam, but that being rarely come-at-able, the beds should be liberally manured with good rotten dung, and be given a heavy dressing of loam. A border facing a shrubbery or a wall covered with climbing plants is not a good place, as the roots of these plants impoverish the soil, and deprive it of moisture. Borders, or a series of beds planted on each side of the centre walk of a kitchen garden, is a good place for them, especially if the kitchen-garden quarters are screened from view by ornamental hedges or espalier fruit trees. [We would advise those who may be contemplating the formation of a border or some beds of these plants, and are not well acquainted with them, to visit one of our leading nurseries at this season, and make a selection of the plants on the spot. Our space is too valuable to permit of a tithe of the fine plants available to be mentioned by name. Ed.]

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Winter-fruiting Cucumbers.—Plants raised from seeds or cuttings some time ago will now be ready for planting. Let the houses be made clean and sweet, and then place mounds of light rich soil, consisting of three quarters loam to one-quarter rotten dung, resting on a bed heated with hot-water pipes. After planting, place a stick to each plant, with one end in the soil, and the other reaching to the trellis, the plants being in a straight line near the front of the house, and from 3 to 4 feet apart. Afford water to settle the soil, and for a few days shade the plants from bright sun. Suitable temperatures are 70° at night; 75° by fire-heat in the day, with a rise of 10° to 15° with sun-heat. Ventilate when 80° is reached, and close early in the afternoon. Keep the soil moist, and damp the foliage in fine weather; at other times maintain a growing atmosphere by damping the floors and other surfaces.

The Pinery.—The potting-up of suckers taken from the summer fruiting-plants will now require attention, and the pit in which they are to be grown should be got in readiness for them, by washing the woodwork and glass, lime-washing the walls, &c. The old hot-bed of tan or leaves having become cold must be wholly or partially removed, and new materials put in its place, so as to secure a bottom-heat of 85°. Sometimes Pine-apples are grown by means of hot-water pipes entirely, and this is a very convenient method, especially when the plan is followed of laying a sufficient number of 2 to 3-inch pipes in a 2-feet thick bed of rubble, sea-pebbles, macadam, or the like, the plunging material being laid on this. The heat from a bed of this kind is more genial, moist, and better suited to plant-culture than the dry heat obtained from a heated chamber roofed in with slate, stone, boards, &c. A bed in which Pine suckers are grown should be so raised that the leaves of the plants are not more than 1 foot distant from the roof-glass when they are plunged. Whatever be the means adopted for affording bottom-heat, a heat should be assured that will last for six months without much fluctuation, and for that reason dung ought not to be used. In taking off a sucker, grip it firmly with one hand low down, and bending it outwards give it a sharp twist, removing it from the plant. The base of a sucker

should be made smooth with a knife, and a few of the lower leaves removed. “Sucker-pots” should be used, that is, pots 1½ to 2 inches deeper than their width, and of a size commensurate to the size of the sucker. If ordinary flower-pots are employed, 48's, 32's, and 24's are suitable sizes, and if new they should be laid for a few minutes in a tub of water. The pots should be drained with 1½ inch layer of crocks. The best sort of soil for suckers is light fibrous loam one year in stack, which should be pulled to pieces of about the size of pigeon's eggs, the finer particles of which should be removed with a half-inch meshed sieve; to this a quart of bone-meal and another fresh soot, and some charcoal broken small, should be added. If dry, the soil should be slightly moistened, and allowed to lie in a heap for a day or two in a warm place. Pot the suckers low down in the pot, and fill up with soil firmly to within 1 inch of the rim. If suckers are plentiful, secure more of them than are actually required, so as to be prepared for emergencies. Plunge the pots to the rim in the prepared bed, allowing space for growth. Until roots are formed the pit should be kept close, and shaded during the warmer hours. The suckers may be dewed once or twice a day, according to the state of the weather, no water being afforded in quantity till rooting-up has taken place to some extent. A suitable temperature at night is 65° to 70°, by day 75° when it is dull, with a rise of 10° with sun-heat. Suckers potted some time ago may have plenty of roots, and should be repotted in the same kind of soil as that recommended for the fresh suckers, and treated similarly. The hot weather makes it necessary to ventilate all divisions liberally, and to damp the floors and walls frequently, and as the loss of moisture in the soil is then great it will be necessary to afford the plants water more frequently, and also to damp the tan, leaf, or other kind of plunging material.

Succession plants approaching fruiting-size, if the pots are well filled with roots, may, as the weather becomes cooler, be afforded a reduced temperature and less moisture.

Fruiters will still need liberal treatment, and occasionally manure should be added to the water that is afforded the soil until the fruit colours. If it is a tan bed, and the heat has begun to decline, and the pots are much above the surface, some new tan may be added, sufficient to raise the bed to the rims of the pots. If more fruits are ripening than can be consumed, it is well to retard some of the least ripe by putting the plants in a cool vinery.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Coleus.—These useful decorative subjects may now be struck from the best coloured shoots, and when the cuttings are rooted, which takes but a short period of time, grow the plants slowly, so as to have sturdy plants to stand through the winter. Cuttings put in later than this date often strike unsatisfactorily, and are too feeble to be of value at that season. Let the rooted cuttings be examined weekly, freeing them from insect foes. Cuttings of *Coleus* should be struck singly in small flower-pots, placed in the propagating-frame, and when they are rooted they may be hardened off and then stood near the glass in a moderately warm house, the chief objects being a stocky growth and good colour in the foliage.

Begonias.—Those of the herbaceous-rooted section that were started early in the summer will have ceased to flower, and should be kept somewhat drier at the root, and when the top growth changes colour and falls over, water should be entirely withheld.

Ananassa sativa variegata, the variegated Pine-apple plant, when well cultivated is an object of striking appearance, quite equal to *Pandanus variegata*, and excellent for standing alone, or associated with others in a vase. The suckers should be left on the older plants till they are sufficiently strong to be taken off with a twist and a pull; afterwards root them in bottom-heat, in the same manner as an ordinary Pine sucker.

Stephanotis floribunda.—In order to ripen the growths of this plant, plenty of air and direct sunlight should be afforded, therefore a place very near the roof of the stove is a good place for it, and the growths should never be allowed to grow at will, but be kept straight and unentangled. Manure-water should be afforded for the next month or so, and then withheld, and the plants afforded cooler treatment. Very weak shoots should be removed, or, rather, spurred back, and clean water freely applied with the syringe, nothing being more effectual in keeping mealy-bug in check.

Allamandas, Clerodendrons, and Bougainvilleas.—Specimens of these species, now standing in cool houses, will, as the wood ripens and the foliage changes colour, require less water at the root, gradually applying less and less as the foliage matures.

Bertolonias.—If the stock of these pretty plants is insufficient, cuttings may now be rooted in sphagnum-moss and silver-sand in a close propagating-frame. As cuttings, the lat-rals are those mostly procurable, but a top may also be used as such. The Bertolonia winters more surely and safely in the young state than in the old, the larger leaves of the latter being liable to damp-off.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Platyclinis glumacea having finished growing, should be placed in a shady corner of the intermediate-house, very little water being needed at the root till growth has recommenced, but an occasional syringing overhead will keep the foliage fresh and green, and free from red-spider. The elegant *P. filiformis* is now flowering from its half-formed growths. It has to support a large crop of flowers, and to continue growth, it therefore needs water in abundance. Fresh compost may be afforded as soon as the flowers fade. When grown in a shallow pan, with a very thin layer of peat and sphagnum-moss to root in, and hung in a cool, shady position in the intermediate-house, this lovely Orchid grows to perfection with but little trouble. The chief foe to its well-being is red-spider, which, however, may be readily kept under. As a table-plant, *P. filiformis*, with its pendulous, slender racemes, is probably unequalled.

Miltonias.—The present season is the best of the year for repotting plants of *Miltonia vexillaria*, because the new growths that are now starting will soon produce from their base a number of roots. But before this work be commenced, make sure that the growths are free from yellow Thrips. If any be detected, dust a little sulphur or tobacco-powder well down into the growths; this will drive the Thrips from their hiding-places on to the surface of the leaves, and by the use of the XL-All vaporiser they may then be easily killed. *M. vexillaria* forms numerous fibrous roots, which push their way just over and under the compost, and for this reason a rather large and shallow surface of soil has been recommended for them; but after much experience, I find that a greater depth of compost is conducive to better results. The young growths rise stronger, and the leaves do not become brown at their points so quickly as they did in the shallow potting material. I select pots that are small in comparison to the size of the plants; drainage is given to about one-fourth of their depth, and instead of the usual crocks for this purpose, I use the thick pieces of the Fern rhizome taken from the peat when preparing it for use; the advantage of the rhizome being, that it makes the plant so much lighter than when crocks are used. Over the drainage place a thin layer of sphagnum-moss, and over this the compost, which should consist chiefly of sphagnum, a small quantity of fibrous peat, and crocks broken quite small. Elevate the plant a trifle above the rim of the pot, and work the compost well in amongst the roots; at the same time place a few thick pieces of crock or charcoal in the centre with the old roots, which will assist the drainage, and prevent sourness occurring in the soil. Potted in this manner, great care is afterwards necessary in watering the plants. For a time merely sprinkle the surface of the soil with a fine-rose watering-can, the principal object being to induce the sphagnum-moss to grow. Until the nights become chilly, keep the plants in the cool-house, and give them a position where they will obtain fresh air at all times. The late summer-flowering varieties, *M. vexillaria rubella*, *M. v. superba*, and *M. v. Leopoldi*, should be kept in the same house as the other species, a month hence will be soon enough to repot them. *M. Endressii*, and the distinct hybrid *M. Bleuana*, and its variety nobilior, succeed best in the intermediate-house throughout the year. Now that they are commencing to make their new pseudo-bulbs, copious root-waterings are necessary, and plenty of fresh air should be afforded them at all times.

Miscellaneous Species.—In the East Indian house many of the *Catasetums* and *Cynochos* are developing their flower-stems. Examine the plants every day, and if found to be the least dry, thoroughly water them. When the flowers have faded, and the growths are nearly made up, suspend the plants in the lightest position available, and give them as much fresh air as possible. So long as the leaves remain fresh and

green, keep them well supplied with water, but immediately they change to a yellowish colour, the amount must be gradually reduced. When the leaves have fallen, place the plants in a cool and drier atmosphere, in full sunshine. When the growths have been properly matured by such means, the plants will continue for a very long time without needing any water at the root. *Cyrtopodiums*, *Bletias*, *Thunias*, *Lissochilus*, *Mormodes*, and the deciduous *Eulophias* may be treated similarly. *Chysis aurea*, *C. Chelsoni*, *C. Sedeni*, *C. lævis*, and *C. bractescens* should now be removed from the Cattleya-house and placed in a stove-like temperature, where they will finish up their growths more quickly, otherwise there will not be time to mature their pseudo-bulbs before winter. The plants will require plenty of root-moisture until the leaves begin to change colour, when they may be returned to their former position in the Cattleya-house. It is now a good time to examine such plants as *Mesospinidium sanguineum*, *M. vulcanicum*, *Cochlidia Noezliana*, *Colax jugosus*, *Oncidium Marshallianum*, *O. varicosum*, *O. crispum*, *O. Forbesi*, *O. dasystyle*, *O. concolor*, *O. curtum*, *O. pretextum*, &c., and any that require to be repotted or re-surfaced may be attended to. The curious *Nanodes Medusæ* is now growing freely, and should be well watered every day.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Autumn-fruiting Strawberries.—Plants of *Vicomtesse Héricart du Thury* and *La Grosse Sucrée*, planted out for fruiting in the autumn, as advised in previous issues, being now in process of swelling their fruit, should be mulched with strawy-litter, first taking care to remove runners and weeds, and to make the plantations clean and tidy. It is probable that copious applications of water will be required once a week until the fruit begins to colour, and no longer. If wet weather should ensue while the fruit is ripening, the latter may be kept clear of the earth by placing twigs of Birch around the plants.

Tomatos.—The fruit on out-of-door plants is growing in size, and such of the plants as are carrying heavy crops should be afforded a liberal dressing of Thomson's Vine Manure. Stir the surface lightly after watering, and the chemical manure may be alternated with diluted farmyard-manure, but discontinue both when cool weather ensues. The leading shoot should now be stopped, as the fruits produced after this date cannot ripen. All lateral growths must be closely pinched off, but the principal leaves should be preserved entire, it being a mistaken practice to cut them off, or halve them; they may, however, be fastened back to allow the sunshine to reach the fruit.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

French Beans.—A sowing of the Osborne's Forcing or Syon House varieties should be made at about this date, in a brick pit capable of being heated, although no heat need be applied before the outside thermometer falls to 32° at night. At the time, however, when the plants come into bloom and onwards, a small amount of artificial heat assists them. Should such pit not be available the sowing may be made in 8-inch flower-pots, placing these outdoors and throwing some shading material over the pots to prevent loss of moisture from the soil, as until the plants appear no water should be afforded. When germination has taken place stand the pots in the full sunshine, removing them to a warm-house on the approach of cool weather. Another sowing may be made ten days after the first one. These late-sown Beans need good loamy soil, and generally liberal treatment from first to last.

Winter Vegetables.—All losses in the ranks of the Brassica crops should be made good by removing the strongest plants to be found in the seed-bed. Plants that are established, should be earthed-up without delay.

Lettuces.—Plantations of all ages should be kept quite free from weeds, and the soil moist and frequently hoed. Those Cos and Cabbage varieties intended for winter consumption should either be planted on a warm border, in rich, free soil, or in cold frames. First-class Lettuces have been difficult to obtain in the south for some weeks past, unless planted on north borders in cool soil, and then waterings have been necessary. Sow some more seeds of Brown Cos Lettuce.

Seed-sowing.—Seeds of Early London Cauliflower, Brussels Sprouts, and Early Cabbage should be sown on an open, dry border, for planting out next spring, and another sowing of Turnips made in rich, well-tilled soil; likewise Spinach, for winter use. Thin out the last sown Turnips when the plants show the first true leaves, and keep the bed copiously supplied with water whilst the drought lasts. The Spinach of the last sowing may need thinning to about 6 inches apart. Sow Rape or white Mustard-seed on vacant land, and dig it into the ground as green manure; it is excellent for the Potato crop.

THE APIARY.

By EXPERT.

Bees in a Ferret's Hutch.—A Soberton correspondent communicates the following incident in connection with the swarming of bees in his neighbourhood:—Mr. J. Silvester, of St. Clair's Farm, had some ferrets in a hutch near an outhouse; on Wednesday last a swarm of bees was seen to alight on the top of the hutch, but in the evening they had disappeared. During the three following days a few bees were seen buzzing about outside the hutch, but no notice was taken of them until Mr. Silvester, sen., was stung by one of the insects. He got a bucket of water and dashed it over all the bees that he could see, thinking to drown them. Then Mr. James Silvester opened the sleeping part of the hutch to clean the ferret's litter, and was astonished to find the swarm inside on the straw. They had been there four days, and had formed a good bit of comb on the top of the straw. Meanwhile the ferrets had slept under the straw each day, coming out to feed in the outer portion of the hutch, and returning without apparently disturbing the busy lodgers. They on their part did not attempt to sting or harm the ferrets. The latter have now been removed, and the bees remain in full possession of their novel hive.

Super-Clearers.—The advantages of using a good super-clearer, or bee-escape, when removing surplus honey are now so obvious and so generally admitted, that we need not waste time in detailing old plans which once took the place of this most useful of modern bee-appliances. Its use adds so considerably to the comforts of bee-keeping, that we will suppose every reader to have furnished himself with an efficient "clearer" of the "Porter" type, of which several good ones are now to be had. In removing surplus, the early morning or the evening, when work for the day is over, are the best times to operate. In the first case, the bees are cleared out by evening, and in the latter by the following morning. When using the Clearer, first gently raise the section-rack or super one-eighth of an inch by inserting the point of a screw-driver at each corner, and slipping in a thin wedge; then give just a puff of smoke at the junction of hive and super, and with a screwing motion lift the latter off, set it on the clearer—placed conveniently at hand—and replace the super with clearer below it on the hive. If an assistant be at hand to slip on the clearer when the super is raised, the job may be done in a moment, and the bees hardly be aware of what has been done. In order to have a few half-filled sections or frames left for extracting when the honey income begins to slacken off in earnest, it is well to remove such sections or combs as are sealed over from strong stocks, and replace them with partly-filled ones from less populous colonies for completion, reducing the amount of unfinished work on the latter, and adding warm coverings to the surplus chambers to guard against cold nights, otherwise there will be great risk of the unsealed honey being carried below into the brood-chamber. By judicious handling of partly-filled sections and frames in this way, and specially by keeping all warmly wrapped up during the closing days of the season, a good deal of the nuisance of half-finished bee-work will be avoided.

Prices for Honey.—We find from a return furnished to the *Beekeepers' Record* by the Statistical Office, H.M.'s Customs, that the value of the honey imported into the United Kingdom during the month of May, 1898, was £4433 of selling honey. There will be many inquiries for new honey, and as crops in the south this year must necessarily be small compared with those of the past two or three seasons, bee-keepers should ask a fair price for first produce. See that you offer a good finished section, put it up in a marketable shape, clean and glazed, and then you can command a fair price for the trouble expended in raising a crop of honey, besides feeling that there is some return for the anxious labour bestowed on the bees, and the long hours spent in the preparation of the surplus honey before it is ready for the market.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR SEPTEMBER.

THURSDAY,	SEPT. 1	—Maidenhead Horticultural Show.
FRIDAY,	SEPT. 2	{ National Dahlia Society's Exhibition at Crystal Palace (2 days).
TUESDAY,	SEPT. 6	{ Royal Horticultural Society's Committee; National Chrysanthemum Society's Exhibition (3 days); Durham Floral Society's Exhibition (2 days); Scottish Horticultural Association Meeting.
WEDNESDAY,	SEPT. 14	{ Royal Caledonian Horticultural Society Exhibition in Waverley Market (2 days).
TUESDAY,	SEPT. 20	{ Royal Horticultural Society's Committees.
MONDAY,	SEPT. 26	{ National Chrysanthemum Society's Floral and Gen. Committees meet.
THURSDAY,	SEPT. 29	{ Royal Horticultural Society's Fruit Show at the Crystal Palace (3 days).

SALES FOR THE ENSUING WEEK.

MONDAY,	AUG. 29	{ Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	AUG. 30	{ Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Clearance Sale of Lights, Glass Erections, Piping, Stock, &c., at Munster Lane, Fulham, S.W., by Protheroe & Morris (2 days).
WEDNESDAY,	AUG. 31	{ Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	SEPT. 1	{ Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	SEPT. 2	{ Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Imported Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—60.2°.

ACTUAL TEMPERATURES:—

LONDON.—August 24 (6 P.M.): Max., 71°; Min., 58°.

PROVINCES.—August 24 (6 P.M.): Max., 65°, Ipswich; Min., 53°, Off Shetland Isles.

ONCE more the great horticultural festival of the industrial classes has come and gone, and we return to our pleasant and we trust profitable task of endeavouring to estimate in some measure its effect on the improvement and advancement of horticulture, among the masses. Year by year we have hitherto had the pleasure of chronicling a continued advance for the One and All Flower Show, and although up to the very eye of the show we have heard the most diverse views expressed as to its dismal failure and transcendent success this year, we have felt pretty sure of a great success, such as we are pleased to write has now been realised.

The opponents of the show, and prophets of impending disaster, had some sturdy facts to rely upon, such as the genial spring in February, the cruel spell of suspended animation, rather than growth afterwards, the cold, late, and on the whole, and in most places, dry summer. Such could hardly be claimed as highly foster-

ing physical conditions for the seasonable and perfect development of luscious fruits, succulent vegetables, and flowers of faultless form, great brilliancy, and fullest fragrance. Hence, there was to be a great falling off in the number and quality of the exhibits, and consequently of the interest of the general public.

Before giving a few facts and figures as to the scope and character of the exhibition, which this year occupied the nave of the Crystal Palace, it may be well to give, in a sentence or two, the views of its sanguine supporters, who confidently predicted that the show would prove

plants and flowers. The vegetables ran to 455 exhibits, the cut flowers to 407, the pot-plants to 166, and the fruit to 155, many of these being collections. Two entries of farm produce came from co-operative farms.

The entire length of the two naves was filled, the north with the industrial, the south with those of professional gardeners and amateurs, the two together demanding a walk of 1½ mile to get a mere glimpse of the productions exposed to view. To assert that all the products were good alike would be to state what would be as impossible as untrue. To



PORTRAIT OF THE RIGHT HON. EARL GREY, K.G.

(President of the National Co-operative Festival.)

a better one than any hitherto held. And it may be here said that this National Co-operative Festival holds the same relation to the Agricultural and Horticultural Association as the Royal Agricultural Show holds to the Royal Agricultural Society of England. Be that as it may, there can be no question that the show furnishes a most opportune annual occasion for a practical, vivid, and far-reaching object-lesson to many, of some of the far-reaching results of the year's work.

The entries in the section for members of the Agricultural and Horticultural Association, and for professional gardeners, included choice varieties of hothouse fruit and greenhouse

assert that the amateurs products were equal to the professional gardeners, would be to understate one of the most gratifying features of this great show. Excluding such fruits as Grapes, Peaches, Melons, Figs, &c., and showing the same fruits, vegetables, and other products in the same numbers, the masses beat the professionals, or matched them in most things, except in Carrots, in which the more learned and cultured exhibitors beat the amateurs easily. But such friendly contests break no bones, and they do an immense amount of good. As a matter of fact, there was only one special prize open to competition to all, in either nave. But throughout the show the two sections, viz.,



VIEW IN THE GARDEN, ABBOTSBURY, NEWTON ABBOT, DEVON.

the professional and the industrial, were kept entirely distinct—thus, each exhibitor is enabled to compete with his equals in means, resources, &c.; but also, so far as may be, he is made to run abreast in social, climatic, and physical environment. Each division of the kingdom competes separately, so that North is not pitted against South, or East, or West. Entries come from all parts of the kingdom, excepting only the extreme North and Scotland.

The character of the exhibits is rapidly changing, though utility still holds a high place in the arrangements of the committee. Hence, there were over sixty complete collections of vegetables of six kinds in each for the workmen's section, and ten each for the professionals. There were also twenty-four entries of smaller collections of vegetables, so that the five hundred exhibits of vegetables alone would have made a complete show in itself. The separate exhibits of specific sorts of vegetables in the amateurs' classes exceeded those of the professional growers by four to one, and included every kind of edible garden product. Those who can recall the few dishes of Potatoes, Cabbages, Broad Beans, Onions, Parsnips, &c., shown by the working classes at the first and second "One and All" shows must be highly gratified at the enormous difference between the entries of twelve or thirteen years ago and those of to-day. In the amateurs' section this year Potatoes took a strong lead with two hundred and and thirty-nine dishes; different varieties of Beans followed with one hundred and forty-six; and of Vegetable-Marrows, almost unknown among the masses then, there were one hundred and seven entries. Onions, or, as one of the comic papers humorously calls them, Spanish beauties, to the number of eighty-six dishes; garden Turnips, eighty-three; garden Peas, seventy-nine, and most of them good; garden Beetroot, seventy-nine; Shallots, sixty; garden Carrots, fifty-six; Lettuces, fifty-three; Parsley, thirty-eight; Celery, thirty-five; Cabbages, thirty-one; Cauliflowers, twenty-four; Radishes, fifteen; Leeks, eleven. The silent revolution that has been effected in the food supplies and social habits of the toiling millions within the last dozen years are most vividly seen in the last two entries in the amateurs' class, viz., Tomatos, twenty-eight; Cucumbers, forty-three. The writer also saw on Saturday, an apparent artisan making a hearty meal out of two paper bags, one of sweet biscuits, and the other of red Tomatos, and has seldom seen anyone despatch a meal with greater zest.

In the professional section the vegetables mounted up to four hundred and fifty-five entries, cut-flowers to four hundred and seven, plants in pots to one hundred and sixty-six, many of them being collections. Fruit, single dishes and collections, numbered one hundred and fifty-five.

Fruit shown by the working-classes, considering the varieties of soils, sites, seasons, &c., was highly creditable. They staged one hundred and fifty-nine entries of fruits, of which twenty-four were cooking Apples, in two dishes of five each; thirty-four dishes dessert Apples—the finest lot of Apples seen this year; eight of Cherries, in dishes of fifty; twelve of Black Currants, in bunches of twenty-four, some very fine; nineteen of Red Currants; eleven of White Currants.

Nine collections of open-air fruit in four distinct kinds—thirty-six exhibits of Gooseberries, in two dishes of thirty each, mostly white and red, some very fine and large; two bunches of

Grapes, seven dishes of Pears, five of one variety; ten entries of cooking Plums, twelve in dish; sixteen entries of dessert Plums, twelve in dish. An ample dessert, though hardly so varied as we have sometimes seen them.

But we must hasten away from the obvious utility of such great shows to the cultural and educational value of such attractive object-lessons, in the teaching of the humanities among the masses. As we improve our food and flowers, we improve with them. It is a fact, now well proved by experience, that of the many better influences which may be brought into dull lives, and brighten while they arise, there is no influence of such perpetual interest and so easily accessible to all, as that exerted through the necessary assiduous care of flowering plants. By bringing these into our windows, back-gardens, and all bald and bare places, we provide new opportunities for relaxation, we stir deeper interests, and realise higher beauties than is possible by other means, sharing them with the man of means, and enjoying the same common pleasures in the successful pursuit of horticulture, fostering the virtues of forethought, patience, and perseverance. Even the joy of success seems thus more complete, as it is a victory rather over natural forces than over a brother or a sister whose needs may be greater than our own.

Neither is it only or chiefly that the quality of garden produce has been immensely improved within the last dozen years. But its nature and quality has been largely changed; at last we have found that the beauty and the fragrance, the tasteful disposition, the form, colour, and scent, of plants and flowers that have proved educating and refining for the rich, are equally so and even more needed among the industrial population.

At this show there were no fewer than twenty-seven baskets of flowers and collections of Roses; eight baskets and thirty-seven collections or bouquets of annuals; ten entries of table-decorations; sixty-three bouquets, vases, epergnes, by the wives and daughters of the members; and forty-four by their children. Among these there were some admirable examples of good taste. The entries of cut flowers from workmen's gardens numbered five hundred and four, and comprised Carnations, Chrysanthemums, Dahlias, Everlastings, Indian Pinks, Pansies, Mignonette, Petunias, Phloxes, Sweet Peas, Antirrhinums, Asters, Stocks, Salpiglossis, Marigolds, Zinnias, Lilies, Gladiolus, Godetias, &c.

Two hundred and fifty-seven pot-plants were shown in the workmen's section, and a wonderful advance shown in the culture of Fuchsias, Pelargoniums, Lilies, Begonias, Petunias, Musk, annuals in pots, &c.

Mr. EDWARD OWEN GREENING has little or no faith in a rest-and-be-thankful policy, and is constantly adding to the area and usefulness of this great show. Hence such special lines and prizes as consolation prizes, special prizes for local co-operative societies; from Mrs. HEMSLEY—so well known as Miss MARIE LOWE—of a picture painted by herself; from the Countess and Earl GREY, handsome shields and challenge cups.

Overcrowding is as great an evil in the garden as in the home. Not a few gardens and photos, large or small, are like pictures that you cannot see for the paint. There can be little pleasure in either picture gallery or garden without space, and restful shadow to relieve the brightness of the colouring or the light. A few small trees or flowering shrubs,

"a bonnie Briar-bush," bright flowers and green groups of Ferns artistically placed in a town or country garden, back yard, or dreary waste corner will go far to make them beautiful.

The following is the list of authorities who have done so much to ensure the success of this great show, viz., Mr. EDWARD OWEN GREENING again acted as Hon. Sec. of the Flower Show, and Mr. GEO. WAUGH as Director. The Chairman of the Flower Show Committee this year is Mr. DANIEL ROBERT SCRATTON of Devonshire, the President of the Agricultural and Horticultural Association. Mr. FRANK BELL acted as Assistant-Secretary to Mr. GREENING.

Earl GREY, accompanied by the Countess GREY, and their daughter, the Lady VICTORIA GREY, were shown through the floral show by Mr. ED. OWEN GREENING, Mr. D. T. FISH, and others, between 3 and 4 o'clock on Friday afternoon, and expressed themselves highly satisfied with what they saw. A sentence or two from Earl GREY's speech at the opening of the flower show, and that of the Bishop of RIPON at the opening of the industrial festival on the Tuesday, will fitly close our review of the event.

The Bishop dwelt on the three great principles of co-operation—1st, that society should be made up of one great body, and not of a number of warring atoms; 2nd, that fellow-workers should not regard one another as rivals; 3rd, that in their dealings one with another, they should have regard to a law of exchange and not be guided by selfishness. He further pointed out that it was the biggest blunder in the world to divide when there was the opportunity to unite, and therefore it seemed to him that the co-operative movement was natural obedience to a natural law.

Earl GREY in an able speech before declaring the flower show open, said that the object of the festival was to focus public attention, not on the commercial side of the co-operative movement, as that could very well take care of itself, but on such arrangements as would enable the million and a half co-operators to give fuller play to the side of their nature which found satisfaction in the cultivation and contemplation of flowers; in the rest and pleasure of music, in the intellectual stimulus supplied by literature, in the enjoyment of games, in the wholesome stir of athletic rivalry, and in the development of that spirit of individual independence, ennobled by the consciousness of a common brotherhood which had been the inspiring dream of every philosopher's Utopia. Earl GREY proceeded to sum up the ideal of the working-man in a terse sentence, leaving the impress of genius thus:—"Having secured a home of comfort and reasonable hours of labour, he and his family should have the opportunity, after working hours, of enjoying reasonable recreation, and that this opportunity should be obtainable at a cost within his means." We claim for horticulture that it is at once the cheapest, the purest, the most satisfying of human pleasures and relaxations.

[Our figs. 44 and 45, pp. 165 and 167, show selections made from the photographs shown on this occasion, and kindly placed at our disposal by the Association.]

SWISS HORTICULTURAL SOCIETY.—We have received the schedule of the International Horticultural Exhibition which is to be held in Geneva, under the auspices of the Swiss Horticultural Society, from June 14 to 20, 1899, inclusive. The President is M. MARC MICHELI, the Secretary M. JOHN WOLF, and Treasurer M. A. BAUDIN. The

exhibition will consist of plants, flowers, fruits, vegetables, and objects of art and industry connected with gardening. We will refer more fully to the items in the schedule at a future date.

"THE BOTANICAL GAZETTE."—The issue for August contains a *Comparative Study of the Development of some Anthracnose*, by BERTHA STONEMAN; together with illustrations of the disease. We are told that the investigations recorded in the paper were undertaken for the purpose of ascertaining by the growth characters developed in artificial cultures, the relationship of certain fungous diseases grouped under the common name of Anthracnose, and to determine, if possible, by a study of their life histories, the connection of these so-called imperfect fungi with perfect or ascigerous stages. We note remarks on *Gloeosporium frutigenum*, which attacks Quinces at Ithaca; then follow *G. phomoides*, the ripe-rot of Tomatoes; *G. venetum*, found on the Raspberry; *Hainesia rubi*, also found on the Raspberry; *G. musarum*, on the Banana, and other *Gloeosporiums*. Then we have *Colletotrichum Gloeosporioides* and *C. legendarium* on the Orange and Water Melon, and so in seriatim dealing with the species inimical to garden and orchard products, and garden trees and shrubs. We acknowledge the great assistance to the cultivator of these life-histories.

CANADA AND THE PREFERENTIAL TARIFF.—On Monday, August 1, there came into operation the new tariff charges—preferential, so called—as established between Canada, the United Kingdom, and all the colonies and possessions of the mother country—that vast agglomeration known to the rest of the world as the "British Empire." In these columns we cannot be expected to enter into full particulars relating to the nature and extent of these preferential tariff charges; but we may say that they—by the reduction of one-fourth of the tariff charges—naturally affect the position and prospects of the West Indies, &c. For the benefit of those directly interested in the matter, we may state that printed copies of all particulars are to be obtained from the High Commissioner for Canada, 17, Westminster Chambers.

NOVA SCOTIA.—The "Provincial Government Crop Report" for July, 1898, issued from the Office of Agriculture, Halifax, affords the intelligence that the outlook for the agricultural year, 1898, in that province is, upon the whole, satisfactory. With suitable weather the Oat and other grain crops will be better than usual, and the Potato crop promises to be slightly above a full average, and roots generally are full of promise. There is a notable increase in the acreage under Wheat in recent years. The fruit-crop, which promised to be very abundant in the flowering period, will fall far below early anticipations, as the returns from the fruit region of the Cornwallis Valley indicate. As in these islands, wet and cold weather succeeding the flowering season, prevented the proper setting of the fruit. It is curious to note that outside of the reputed Apple-growing districts the Apple crop promises better than usual.

THE WEATHER AND THE CROPS.—The weather during the past week has varied somewhat in different parts of the Kingdom. Throughout the greater part of England it was sunny and intensely hot, on Monday in London the shade warmth was 86°; but in some parts of Wales and Scotland there was a good deal of rain. Violent thunderstorms have swept over the west of England, Wales, and part of Ireland, doing a considerable amount of damage to crops, while the weather was hot and dry in most of the English counties. The work of harvesting has gone on apace in all but the latest districts, although the laid state of much of the grain-crops has rendered progress less rapid than it would otherwise have been.

"DICTIONNAIRE PRATIQUE D'HORTICULTURE ET DE JARDINAGE."—This French edition of NICHOLSON'S *Dictionary of Gardening* has reached its seventy-fourth part, and is now nearly completed. To those

to whom the language presents no obstacle, we commend this edition, as containing much information not included in the original, and many woodcuts from the *Revue Horticole* and M. M. VILMORIN'S publications.

THE ROSNEY PEAR.—We read in American journals of a new variety of the Pear, a seedling raised in the Mormon territory at Utah. The fruit is described as of middling size to large, shapely, in colour a rich yellow, and crimson-blush on the sunny side. It is a fortnight later than Williams' Bon Chrétien in ripening. The agents for the sale of the variety in the Eastern States are the Phoenix Nursery Co., Illinois. On this side of the Atlantic we seem to have an excessive number of varieties that ripen in September and October.

ANNUAL OUTING.—We are in the very midst of the holiday season, and societies as well as individuals appear to be making the best of it. We have in our hand letters from the secretaries of the Fleet and District (Hants) Gardeners' Mutual Improvement Association, and the Lee, Blackheath, Lewisham, and West Kent Horticultural Society. Members of each of these estimable societies journeyed to Reading on the 18th inst., and were shown the principal features in the establishment of Messrs. SUTTON & SONS—their offices, warehouses, trial-grounds, and indoor flower department. From the tone in which both letters are written, it is evident that the parties had an excellent time at Reading—that, indeed, Messrs. SUTTON treated the visitors with their customary hospitality. Frequent visits to this and other like establishments has convinced us that a day so spent must be most useful to all intelligent gardeners, and is a capital means of blending instruction with enjoyment. Summer will soon have passed and holiday weather will not continue indefinitely. To all gardeners now holiday-keeping, and others, who look forward to a little relaxation in the immediate future, we extend our best wishes. May the time so spent the better fit them for another year's thought—and work.

THE PLUM CROP.—This important fruit, the crop of which is better than that of last year, is ripening rapidly with the forcing weather. What we have seen in the London markets are arriving in excellent condition. The tropical weather has enhanced the consumption of fruit, so that the demand has been lively. Lower prices may, however, soon begin to rule as the markets get glutted, few of the varieties grown in this country being suitable for drying, so that growers will be constrained to take what they can get for their crops.

ROBERT VON POMMER ESCHÉ.—We note with regret the death of this enthusiastic horticulturist, on August 5, from apoplexy. The deceased was an actual privy financial councillor, and provincial director of taxes, and the first director of the Prussian Horticultural Society, of which he was a devoted worker for a period of ten years.

PERPETUAL-FRUITING STRAWBERRIES.—The lecture on this subject by M. H. VILMORIN at the Drill Hall on Tuesday last was of much interest, and the plants and fruits from various exhibitors furnished visitors with an opportunity of noting the comparative value of the varieties recently introduced from the Continent. They are doubtless well worth the attention of gardeners in this country, and for the rest, there appears to be every probability that subsequent improvements upon them will be obtained. We hope we may look forward to having excellent crops of fine Strawberries in August.

FLOWERS IN SEASON.—Just when our southern Carnations have passed away, or are small in size, as are secondary flowers usually, we have received a box of magnificently-fresh and fine flowers from the country to which so many jaded southerners have gone in quest of a cooler, less enervating atmosphere. Messrs. LAING & MATHER, of Kelso-on-Tweed, state that all of these blooms have been produced out-of-doors upon layers planted in the borders last autumn. We

congratulate the firm upon the excellent quality of them. Some, at least, of the varieties are well known to us. The Pasha, a fine reddish apricot-coloured flower, with fringed petals; Queen of the Yellows, a yellow self of much merit; Primrose League, a pale yellow-ground Picotee, striped and spotted with purple and rose; Mephisto, a deep crimson self; Dundas, scarlet—one of the brightest scarlet Carnations we have seen, of large size and fine form; Magnet, a pale yellow ground, deeply edged and marked with rose; Mrs. David Dunlop, a pure white self; Scarlet Clove, a deliciously-scented scarlet variety of the Clove; Lady Nina Balfour, deep blush self; Viscountess Melville, dull crimson self of pleasant scent; Lady Waldie Griffiths, large, deep purple self; Mrs. Scott Kerr, yellow ground, curiously streaked with scarlet; and Kelso Abbey, buff ground, flaked with rose, petals somewhat fringed. These are the varieties sent us in such fine condition from Kelso.

THE PROPAGATION OF HYACINTHS.—In *American Gardening* for August 13, we have an excellent handling of the subject of the propagation of the Hyacinth, and incidentally of other bulbs, by "cross-cutting" and "scooping-out," both of which methods are rendered intelligible by means of illustrations. The writer of the article is a Mr. S. B. DICKS.

M. J. M. MONIZ.—The death is announced of J. M. MONIZ, known by his investigations of the natural history of Madeira, where he died on July 11, at the age of sixty-six years.

KILLED BY THE STING OF A WASP.—A labourer named CHARLES HUTCHINSON went into his garden at Kirby Muxloe, near Leicester, on Sunday night, and plucked a Gooseberry, which he began to eat. A wasp which had penetrated inside the skin of the fruit stung him at the root of the tongue. He went into his cottage and medical aid was summoned, but death ensued in five minutes.

APPLE ANDENKEN AN PALANDT (Souvenir of Palandt).—This new variety was brought into commerce by the firm of WESTENIUS successor, of HILDESHEIM, and named by the son in honour of his departed father, the well-known pomologist, PALANDT, and raiser of the variety. The fruit is of middle-size, coloured deep crimson and yellow, possesses a small core, a prominent eye, half-open or closed, and a thin stalk, set in a tolerably deep basin. The flavour is spicy and pleasant; ripe in November, and keeping good till March. The growth of the tree resembles Baumann Reinette. *Gartenflora*, August 15.

SOBRALIA CATTLEYA.—It will interest Orchid growers to know that this gigantic reed-like Sobralia, which has for some years grown remarkably well in more than one collection, but persistently refused to flower, is at last about to bloom in the famous collection of Sir TREVOR LAWRENCE, Bart., Burford, Dorking, in the care of Mr. W. H. WHITE. The bud, which is of the purple hue familiar in *S. macrantha*, appears on a stem proceeding from the side of one of the tallest growths, about 8 feet from the base, and 2 feet from the top of the stem.

EXPORT OF INDIA-RUBBER FROM THE AMAZON REGION.—The latest report of Mr. CHURCHILL, the British Consul at Para, which is the chief port to which the shipping of the Amazon resorts, shows that the greater part of the great rubber production of the Amazon region is exported from Para. In 1896 the value of this export from Para was nearly 3½ millions sterling, of which Great Britain took over 1½ million, nearly the whole of the remainder going to the United States. The quantity was 15,226 tons, the total export from the Amazon being 20,981 tons, the balance being shipped largely at Manaus, about 1000 miles up the river. The chief sources of production are along the great rivers and islands in the Amazon belonging to the State of Para, the valleys of the main tributaries of the Amazon, such as the Purus and Madeira, and the Amazon districts of Bolivia and Peru. Mr. CHURCHILL gives a long account of this remarkable industry in the Amazon region, its history, the mode in which it is now

carried on, the profits, the varieties of the gum, and the like. The most important observation he makes under this head is that the supply is regarded by competent authorities as inexhaustible, because the tree is being continually reproduced by nature. Some areas, such as Cameta, on the Tocantins, have become exhausted, but when abandoned for a time they recover, and many districts have not been tapped at all. The area producing Para rubber amounts to a million square miles, and further exploration will probably show that this is under-estimated. The richest zones at present known are along the banks of the southern tributaries of the Amazon, and on the islands in the main stream. Some of the northern tributaries have not been explored. Cocoa and Brazil Nuts are the chief exports after rubber, but

Insects of the year 1897, prepared under the direction of Walter B. Barrows, Consulting Zoologist of the Experiment Station, by Rufus H. Pettit. — *Queensland Agricultural Journal* for July, 1898, by authority. (Brisbane: Edmund Gregory, Government Printer.)—Canada, Department of Agriculture Central Experiment Farm, *Report of the Foreman of Forestry* (W. T. Macoun), 1897. (Oceana Government Printing Bureau.)

SOME DEVONSHIRE GARDENS.

(Continued from p. 118.)

ABBOTSBURY (see Supplementary Illustration).—The leading feature of this place, which is snugly situated in the suburbs of Newton Abbot, is a very fine rock-

Conspicuous in this respect is *Zauschneria californica*, a good continuous-flowering plant, *Armeria rosea*, *Papaver nudicaule*, *Aster alpinus*, *Erigeron speciosus*, *Cheiranthus Dilleri*, *Aubrietia Leichtlini*, &c. Striking groups of Irises and *Spiræas* (*S. palmata*, *S. astilboidea* and others), with *Wahlenbergias* in variety, are scattered with profusion along the undulating margin of the basin. Standing boldly up are fine clumps of *Eulalia japonica*, *Spiræa gigantea*, and *Senecio japonicus*. Among the smaller plants are many varieties of *Androsace*, *Gentiana*, *G. verna*, *G. bavarica*, *G. septemfida*, &c., *Lithospermum prostratum*, and the like. In a very natural-looking cave are to be found *Hymenophyllum radicans*, *Cyrtomium falcatum*, with several other Ferns and Lycopods. Hugging the rocks is a fine group of *Ramondia*



FIG. 44.—A VIEW OF A TERRACE GARDEN AT BROOMFIELD.

(Exhibited in the Photograph Section of the "One and All" Flower Show by Fred Spalding, Chelmsford.)

they are of small importance compared to it; and although the region produced Rice of excellent quality it is no longer cultivated, as all the labour is absorbed in the rubber industry, and the people live almost wholly on imported food. *Times*, Tuesday, August 23.

PUBLICATIONS RECEIVED.—*Principal Poisonous Plants of the United States of America*, by V. K. Chesnut; Washington Government Printing Office. — *The Botanical Gazette* for August, 1898. Published by the University of Chicago, Illinois—*A Study of Normal Temperature and the Tuberculin Test*, by Charles E. Marshall, Bulletin of the Michigan State Agricultural College, Michigan. This deals with Bacteriology and Farm Hygiene, as applicable to the treatment of domestic animals.—Bulletins from the same station consist of *Fertiliser Analyses*, by R. C. Kedzie, Chemist at the Station; and *Some*

garden. It was laid out for the late Mr. E. Fisher by Robert Veitch & Son, of Exeter, and is at present under a temporary lease from his executors to that firm. It serves the double purpose of showing an extensive collection of rock and alpine plants growing under somewhat natural conditions, and of illustrating the beauties and attractive features of a well-planned rockery. The site, originally, was a flat meadow of about an acre in area, but by means of excavating in the centre and irregularly building up the sides, a picturesque tureen-shaped rockery has been formed, with cascade, shelving boulders, and a streamlet meandering over the shallow and rugged rocky bed to a length of about sixty yards, the width of the rock garden being about forty yards.

Approached from the higher end the effect is good, plants showing bold patches of colour, standing well out between the rocks, some perched high, and others just revealing themselves beneath the boulders.

pyrenaica, while on the soil just below is a good, bright patch of *Heuchera sanguinea*. The Cheddar Pink (*D. cæsius*), and several members of the *Dianthus* family, look very happy in their positions, while alongside of them are (in a boggy situation) *Dodecatheons*, *Cypripedium spectabile*, *Houstonia cœrulea*, *Primula rosea*, &c. Such plants as *Phormium tenax*, and others, of striking foliage, give a picturesqueness to the place, and are in fine contrast to carpet-like clumps of *Veronica repens*, *Thymus lanuginosus*, *Herniaria glabra*, &c. There are about 2000 species represented, and at the present time they are doing uncommonly well. The collection of new *Nymphæas* is a fine one, and includes some of Marliac's finest varieties, viz., *N. Marliacea albida*, bearing a profusion of very large white flowers; and *N. Marliacea chromatella*, which has bright, soft yellow flowers, with handsome foliage, spotted and marbled with bronzy-brown. There

are also planted some of the smaller-flowered varieties, such as *N. Laydekeri rosea*, *N. L. liliacea*, *N. pygmæa alba*, and others. They have all flowered very freely this summer, and have greatly beautified the pool. Still-water in a rockery may become an eyesore, but in this case the pool seems the natural complement to the overhanging rocks; and the bright colours of the Water-Lilies afford just the necessary ornamentation. A good illustration of the landscape-gardener's art is furnished by the cave and waterfall. The steps leading down to the cave appear to be hewn out of the rocky cliff, and are everywhere excepting the actual treads of the steps, carpeted with cushion-like plants, which seem to have grown there in the most natural manner. The walls of the cave itself has an irregular lining of shade-loving Ferns, and the tufts of *Scolopendrium crispum*, *S. c. fissum*, and *Selaginella helvetica* afford a cool and pleasant effect. Just below, and spanned by a stepped stone bridge, is a ravine, down which tumbles a very effective cascade of about 6 or 7 feet in width, with a fall of about 15 feet, and while being effective, it supplies moisture to the neighbouring plants. An effective specimen in this part of the garden is *Acaena ovalifolia*, which forms a verdure-clad veil of over 10 feet long, and half that in width. As a contrast to the brightly-coloured alpine around few, if any, subjects can compare with it.

By means of a zig-zag descent, a lower level is reached, and here dainty little groups of hardy species of *Cyclamens* thrive wonderfully, receiving the necessary protection from the sun's rays from some dwarf forms of Japanese Maples. Below this is the pond, which derives its supply of water from the cascade, and seems to be its most natural goal. The water emerges on the east side of the pond as a tiny streamlet, finds its way among the stepping-stones, and is finally hidden from view under a rocky ledge. The smaller plants on the low banks surrounding the pond are *Campanula G. F. Wilson*, *C. Waldsteiniana*, *C. garganica hirsuta*, *C. erinus*, &c.; *Primula Clusiana*, *P. Sieboldi*, *P. marginata*, *P. japonica*, *P. sikkimensis*, and others; while good clumps of *Papaver alpinum* in variety afford plenty of colour without appearing unduly heavy. The views are very varied, according to the different points from which they are taken. The plants employed have been selected with a view to obtaining an early effect, to be succeeded by a blaze of summer flowers, and that, in turn, by the rich tints of autumn foliage and flowers. *A. H.*

HOME CORRESPONDENCE.

SAXIFRAGA PELTATA.—I have just measured a leaf of *Saxifraga peltata* which I thought was an extra specimen—the leaf-stalk is $5\frac{1}{2}$ feet in length, and the leaf over 2 feet in diameter. There are others very similar, but this was the longest. It is much more gigantic than that described in the *Botanical Magazine*; it throws up flower-stems several feet in length. *Justus Corderoy.*

ACALYPHA SANDERII?—It seems, according to the *Revue Horticole*, that Mr. Brown, of Kew, who named the above most beautiful and interesting plant, which made such a sensation when exhibited by Mr. Sander at the Ghent Quinquennial Exhibition last spring, was mistaken in pronouncing it to be a new plant, as it is only *A. hispida*, described by Sir Joseph Hooker long ago as a well-known Indian flowering plant, and of which a coloured drawing, dated 1812, exists in the library of the Herbarium at Kew. Burmann describes it in his *Flora Indica* under the name of *A. caturus*, and it is also mentioned in a work of the same title by Roxburgh. Rumphius describes and figures it under the name of *Cauda felis*, or Cat's-tail. *W. E. G.*

BLACKBERRIES.—Whilst fruit and ordinary trees, and most of our field plants, seem to be badly needing moisture, the long line of cultivated Brambles that edge a shrubbery-border at Maiden Erlegh, Reading, and are trained up to a wire-trellis, 6 feet in height, not only look remarkably well, making fine summer growth, but are also carrying what promises to be a wonderful crop of fine fruit. It is interesting to learn in relation to these Blackberries,

that even before they are ripe, they are being asked for as dessert fruits. It seems as if, whilst some of the American varieties, as are found in Cliveden, need plenty of root-moisture, the pretty *Rubus laciniatus* prefers a dry, warm position. Evidently it needs warmth to induce the suckers to harden, and thus become fruitful. Some of the trusses of fruit on the Maiden Erlegh bushes are of great size. One of these flat-trained bushes, and not at all stiff or formal, but just loosely tied to the wire-trellis, is some 20 feet by 6 feet, covering the entire space, and when carrying ripe fruit will be quite a picture. It will be very difficult to produce any black-fruited hybrid that will prove more fruitful or more pleasant eating. The very fine clusters of the Kittatiny, which Mr. B. Wadds sent up to the Drill Hall in August last, were probably the best examples of the variety yet seen in England. These were the product of plants growing in strong, wet soil, where in the winter the water overflowed. Assuming that for what is the finest flavoured of the American varieties, so much of sunshine is needful, we find in that and the free-growing *R. laciniatus* very diverse requirements, which those who embark in Blackberry-culture should well understand. *A. D.*

TURNER'S CRIMSON RAMBLER ROSE.—Although this charming Rose is now well known, complaints as to its unsatisfactory flowering are not unknown. On visiting a garden in the neighbourhood of Woking a few days ago, the owner told me that notwithstanding his plants had been established for three or four years, he had so far been disappointed with its flowering. On examination the cause was found to be severe pruning. In my opinion pruning is scarcely necessary with this variety if much flower is looked for, and this is proved by the magnificent specimens at West Dean Park, Chichester. Mr. Smith, the gardener at that place, uses the variety for arches, and the plants form masses of bloom. *E. S., Woking.*

SCARCITY OF WASPS.—I was greatly surprised to read in your last issue a correspondent's remarks on the scarcity of wasps this season. We are literally swarmed with them, and this notwithstanding the fact that I have already destroyed fifty nests this season, besides numerous others that have been brought to my notice in the immediate neighbourhood. I might add, that I paid also for sixty dead queen wasps in the spring. The plague is not confined to this particular neighbourhood, for I have information that it exists in other parts of the county. The spring here was exceptionally cold, and one of the least favourable on record. We had no seasonable weather until July 2, when it became very hot, and remained so for four weeks; and I think it was from that period that the wasps increased so rapidly. My experience has been that they are not so venomous as usual, which I think may be explained by the dulness of the weather, for although it has been and is still very hot, we get no brilliant sunshine such as that in which the wasps appear to delight and grow strong. Although some hundreds of wasps have been caught in the dwelling-houses, few persons have been stung, and no one seriously. *Stanley Platt, Head Gardener, Loughcrew, Co. Meath.*

MONTBRETIA.—A bed of *Montbretia Pottsii* or *M. crocosmaeflora* has a charming appearance, and few other plants are so useful for cutting for house decoration. The two varieties named grow to the height of $2\frac{1}{2}$ feet, and possess *Gladiolus*-like foliage, of a pleasing bright green colour, and the flowers are borne on erect branching stems in profusion. *M. crocosmaeflora* has orange-red coloured flowers, and these are much larger and bolder than those of *M. Pottsii*, which is a hybrid. In arranging the flowers in vases, the most suitable greenery is their own foliage, with perhaps a few bits of the foliage of the culinary *Asparagus*. In water the flowers continue to open for several days. The blossoms may also be utilised with good effect for tracing on the table-cloth of a dinner-table, using the expanded flowers, and inserting them in triplets; and for button-hole bouquets, when wired, they are very attractive. Cultivation is very simple. Many cultivators permit their bulbs to remain in the same spot year after year, but this is a mistake, as by so doing the sun's rays cannot reach the soil where the bulbs lie, and as a result they do not mature thoroughly, and good flowering depends on their proper maturation. The soil for the plants should be trenched in the autumn or early winter, afterwards working in some farm-yard dung, and if the soil be heavy, it may be rendered lighter with potting-bench refuse,

sand, &c. The bulbs should be lifted in October or November, or when the leaves begin to decay, and planted in potting soil in cutting boxes, and be placed in a Peach-house or vinery near the hotwater-pipes. These in the natural course of things contain just that amount of warmth which the bulbs require to finish the ripening process. A cold frame or pit is a suitable place for the bulbs in the winter, taking care that they do not become wet. In the month of February they should be shaken out, cleaned and reboxed, and placed in a close frame and kept moist by sprinkling. When the bulbs commence to grow a dryer atmosphere should be afforded, and more air given, the lights being eventually left off altogether. In fine weather in April, the bulbs may be planted in the ground prepared for them in rows 18 inches apart, and 6 inches from bulb to bulb. *H. T. Martin, Stoneleigh.*

LACHENALIAS.—I have grown the above successfully and extensively for nearly fifty years until four years since, when disease attacked the bulbs. They are covered more or less with a brown-looking, shrivelled skin. I enclose a sample, and shall be glad of your opinion. I have taken various precautions; last year dusted the bulbs with sulphur, the year before soaked them in weak Condy's fluid. *T. T.* (See "Answers to Correspondents," p. 172.)

JUDGING FRUIT.—At an exhibition recently held in North Devon, a prize was offered for a "Collection of fruit, six dishes." One exhibitor staged black and white Grapes, one bunch of each on the same board, and four other kinds of fruits in plates, including, I think, Peaches, a Melon, Nectarines and Figs. Over this collection some discussion took place; the controversy arising from the fact that one of the judges contended that there were but five dishes of fruit presented. He would not admit that the two varieties of Grapes, on one board, could be considered as two dishes. A third party was called in, who also took this view, and as it came to be two opinions to one the exhibitor was disqualified, and a much inferior lot of six distinct sorts was awarded 1st prize. The schedule simply ran, "Class 98: Collection of fruit, six dishes." At a much more extensive and perhaps important show held in the same county during the past few days, class 45 in the schedule reads as follows:—"Collections of fruit to consist of ten dishes. In this collection two dishes of Grapes, white and black (two bunches in each) are required, but not more than one dish of any other kind of fruit allowed." In one prize collection I noticed on one board a bunch of Alnwick Seedling, and one of Madresfield Court; on another board a bunch of Muscat of Alexandria and one of Buckland Sweetwater, four kinds; on other dishes were a Pine, Melon, Peaches, Figs, Apricots, Cherries, Plums, and Nectarines, eight sorts. Was this perfectly correct? I wondered if the exhibitor had complied with the schedule in its entirety. Is it not usually considered that a dish of Grapes is two bunches of one kind? and can an exhibitor stage four distinct sorts for two dishes? It struck me on looking at this latter decision, that it scarcely corroborated that in the former case. The judges were not the same persons, but at both shows the same exhibitors were present in one or more classes. I should much like to know how one ought to act if such a collection came before them at any time, when called upon to officiate as judge? *Vitis.* [These difficulties arise from lack of clearness in the wording of the schedules. Usually a dish is taken to mean a distinct kind of fruit, and one kind only. *ED.*]

SEVERE THUNDERSTORM IN SOMERSETSHIRE.—A very severe thunderstorm, accompanied by hail of immense size, passed over this place on Sunday last, August 21. The glass has been much damaged. In some cases holes were cut through as if shot from a rifle, and the hailstones measured from 4 to 5 inches round. Such a storm, I believe, was never known in the locality before, and it will be long remembered. *James Webber, Dunster Castle Gardens.*

GARDENING CHARITIES.—As a regular reader of the *Gardeners' Chronicle* since my boyhood, I can well remember that you have at frequent intervals allowed your columns to be used by those interested in gardening charities to defend them against those who, from various standpoints, have assailed those excellent institutions. I think the greatest stumbling-block to these assailants seems to me to be that, with few exceptions, they look upon the institutions as benefit-clubs worked under wrong names. This, as has often been stated, is entirely wrong, for

I take it that these institutions are philanthropic, not benefit societies. Take, for instance, the Gardeners' Royal Benevolent Institution: it is kept going chiefly by voluntary subscriptions; and it is a fact that is well known, that, alas! the bulk of these subscriptions come from the wealthy supporters of the profession, and not from the ones who will eventually derive benefit, namely, the gardeners themselves. No one will, I think, contradict the statement of Mr. Fletcher, who in your issue of July 16, p. 53, says, the best thing is for everyone to help himself. This we know, is very excellent advice, but everyone cannot, or does not, help himself by laying by the store for a time of adversity or for old age. In many cases, and especially among gardeners, it is impossible to do so, and it is just this that the Gardeners' Royal Bene-

would have in the same ratio a smaller number of votes allotted; whereas a rank outsider would have none but the amount of support he can command among his or her friends who are subscribers. The Gardeners' Royal Benevolent Institution is undoubtedly doing a grand work, but from some talks that I have had with many intelligent gardeners, I think the work is not sufficiently known to be appreciated as it deserves. Much might be done by the committee, I think, in arranging meetings in connection with flower shows, &c., whereby its merits and objects should be explained and subscriptions invited. The gardening press has done an admirable work by permitting the discussions thereon, and the reports published therein, but still more could be done, in the direction of individual effort. *John Clayton.*

as strongly as ever. The first is, that it is an error in judgment to multiply classes. Leaving out of sight the summer Roses, we have already hybrid Perpetuals and Bourbons (the latter very few in number), Teas and Noisettes, and my contention has been that it would greatly simplify matters if these were separated into two classes, Hybrids and Teas; into the former I would throw all Roses having Bourbon blood, and those which are now called Hybrid Teas, leaving the Teas and the few Noisettes in a separate and distinct class, as they are now. My second objection was that it would lead to no end of confusion, and this seems to be more fully developed every day; the class was first formed by



FIG. 45.—A VIEW OF A WINDOW-BOX AT RICHMOND.

(Exhibited in the Photograph Section of the "One and All" Flower Show by C. Byrne, photographer. See p. 162.)

volent Institution has been trying to do for gardeners for years. To look at the question solely from an altruistic point, one of the best invested guineas that can be found even in this age of alluring prospectuses and gold-fields galore is for a gardener to become an annual subscriber to the Gardeners' Benevolent Institution. It has often been shown that the subscriptions of gardeners, if relied on for the continuance of the Institution, would be utterly inadequate to pay the pensions at present granted, without adding to the list. A point to which Mr. Fletcher seemed to attach great weight was the fact that subscribers for a certain number of years fewer than fifteen only received a "vote," or number of votes. Well, sir, at an election, votes are the only necessity, the point is to have plenty, and for a subscriber of eight or ten years the chances are greatly in his favour, from the fact of his having allotted to him a certain number of votes, in addition to all he can command at the election. A subscriber of a shorter period,

THE ROSARY.

HYBRID TEA ROSES.

I HAVE been often twitted by many of my Rose friends as to the position I have taken up with regard to hybrid Teas; and sometimes when the subject is mentioned, and some one of the class is much praised, a significant cough and a side glance at myself seem to imply—are you not very much ashamed of yourself? Of course, as in many cases, there is a misapprehension of my meaning, and I am credited with running down some very beautiful flowers when I have no intention of the kind; my objection to the introduction of this new class is not that I find any fault with the Roses, but that a new and separate class has been made for them. There are two things which I have always stated with regard to them, and which I still maintain

pitchforking into it Roses which had always been classed as Hybrid Perpetuals, and of whose origin in many cases the raisers knew but little. When I first saw *La France* at Guillot's, the raiser himself told me he had no idea of its origin; the climate of Lyons being favourable for the ripening of seed, Rose growers use to go into their plots of Roses, gather the hips indiscriminately, so that when the seedling plants bloomed they had not the slightest idea from what variety they had been gathered, or how they had been fertilised. But now each year brings us a number of additions. In some cases we are told how they have been obtained, but whether the operation has been carefully carried out, so that nothing else has interfered with it, we are not told. How often one is asked now, what is a hybrid Tea? and how difficult the answer! One has oftentimes to fence the question, and say, as

a great master of logic used to be fond of saying, "Definitions are dangerous things, and I would rather not give one." But now as to the confusion. I have just been reading in a contemporary two papers on the subject of Roses. They are carefully written; the first one is over the signature of "P.," and is entitled "Hybrid Tea Roses," and is a very exhaustive paper. In it he mentions La France as the first hybrid Tea, and he goes on to say that some years later Captain Christy made its appearance; but both of these were classed by their raisers amongst the Hybrid Perpetuals, as was also Lady Mary Fitzwilliam by the late Mr. Bennett. In the second paper, which bears no signature, and is under the head of "Good Garden Roses," the writer says, "One of the most surprising things in connection with the great Rose family is, how really few of the H.P. kinds generally are good garden Roses, that is, creating a show, and producing really good-sized blossoms also." After mentioning with praise Ulrich Brunner, the writer goes on to say, "Equally good in its way is Lady Mary Fitzwilliam, a prettily shaded flower, very full and pleasing to the last; another fine kind is Captain Christy, a Rose that rarely fails to produce a good crop of handsome flowers in a soil that is moderately light and warm. In some respects La France is excellent, though the habit is not so uniformly compact as in the kinds previously mentioned." Here, then, we have in the same page two writers, who evidently knew what they were writing about, describing the three Roses named, the one as Hybrid Perpetuals, and the other as Hybrid Teas, and is not this confusion, and is it not likely to muddle any one who is just beginning to interest himself or herself in forming a Rose-garden. I am quite aware this is a preaching in the wilderness, and that we shall have the pleasure of seeing many a Rose about which the raiser himself is not sure, put in a class where it ought not to have a place.

Ever raiser of seedlings is, I believe, conscious of the fact that although he may cross two flowers, it does not at all follow that the effects produced are his work, and the seedling flower they exhibit may show no sign of cross hybridisation. In looking round one's garden now, we can see at once what a debt of gratitude we owe to the Tea Roses for giving us such a feast of flowers in the autumn; many of the so-called Hybrid Perpetuals fail to gratify us in this respect. In some gardens, one variety will do so, and the grower may attribute it to some especial care that he has taken, but the next year the same plant may do nothing in the autumn. Of all the hybrid perpetual Roses, the one which I think is the most persistent autumn-flowerer is that grandest of all Mr. Bennett's seedlings, Mrs. John Laing. In all gardens, in all soils, and in all climates, it seems to be fully at home; and if one could only get an equally persistent autumn-bloomer of the colour of Louis Van Houtte, what a prize it would be!

Some very beautiful Roses have been recently added to this class of hybrid Teas, but I do not see that any loss would have accrued if such flowers as Kaiserin Augusta Victoria had been placed amongst the Teas, and Caroline Testout and Clara Watson amongst the Hybrid Perpetuals. A good many, but not all of the additions, come from France, but seeing the drift of things amongst Rose-growers here, they are falling in with the taste, and describe many of their Roses as hybrid Teas, which would formerly have been placed among the Hybrid Perpetuals. Most of these new varieties are vigorous in growth, some of them are not so; these, under whatever name they come, or however brilliant their descriptions, ought to find no quarter in these days.

Vigour of constitution is one point to be most earnestly insisted upon as essential to any new Rose. The National Rose Society has set a good example in this respect by requiring that not only the blooms of any new Rose exhibited for the purpose of obtaining the Gold Medal of the Society should be shown, but that a ground plant should also be exhibited; thus enabling rosarians to see what is the character of the plant as well as that of the flower. *Wild Rose.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 23.—That the fortnightly meeting of the Committees, held on Tuesday last in the Drill Hall, Westminster, was one of several that occur annually during the holiday season was very evident. The hall was not nearly filled with exhibits, and the number of visitors during the day was decidedly small. As the Chairman remarked after the lecture by M. Vilmorin upon Perpetual Fruiting Strawberries had been given, "London is not at home at the present time;" and visitors being fewer than usual, exhibitors are not so desirous to make a show. In August one does not expect a large display of Orchids, and on Tuesday we did not get them. Before the Fruit and Vegetable Committee, there were submitted several collections of fruit, including two from private exhibitors and an equal number from the trade. The only awards to novelties made by the committee were Awards of Merit to the well known Currant-Tomato, and to a new and deliciously flavoured early Apple named Langley Pippin. The former was from Chiswick and the latter from Messrs. JAS. VEITCH & SONS. Among a few miscellaneous exhibits were several samples from different parts of the country of the alpine and perpetual fruiting Strawberries. The Floral Committee recommended Awards of Merit to Gladiolus Madame Desbordes Valmore, to Hunnemannia fumarifolia, to Lathyrus grandiflora alba, and to Nymphaea odorata sulphurea grandiflora. There were collections of hardy annual and herbaceous flowers, a large display of Gladioli, a few stove and greenhouse plants, Bouvardias, and miscellaneous and comparative novelties.

Floral Committee.

Present:—W. Marshall, Esq., in the chair; and Messrs. J. Fraser, O. Thomas, C. T. Drury, H. B. May, R. Dean, G. Nicholson, G. Stevens, W. Howe, J. F. McLeod, R. B. Lowe, H. Selge Leonard, W. Bain, C. E. Pearson, J. Fraser (Kew), C. E. Shea, H. J. Jones, E. T. Cook and D. B. Crane.

Messrs. BARR & SON, King Street, Covent Garden, obtained an Award of Merit for Gladiolus Lemoinei, Mme. Desbordes Valmore, a bluish-tinted variety, with very distinct markings of brownish scarlet on the two lower segments. Messrs. BARR had also a fine display of general hardy flowers, among which the herbaceous Phloxes, Heleniums, Gladioli, Liliun elegans Batemanniae, Gaillardias, and Helianthus were conspicuous. The new yellow flowered Kniphofia lachesis was also observed in this collection (Silver Flora Medal).

Messrs. WALLACE & CO., Colchester, exhibited spikes of bloom of Gladiolus Madame Desbordes Valmore, which was recommended an Award of Merit, and a general collection of beautiful hardy flowers. These included a number of varieties of Lemoinei's hybrid Gladioli, amongst which the purple or blue flowered variety Sénateur Volland was noticeable. Some Gladiolus Brechleyensis, a few strong spikes of Kniphofias; also Liliun auratum platyphyllum, and other fine varieties of the Japan Lily, Hemerocallis aurantiaca major, and other species (Silver-gilt Banksian Medal).

Mr. Hudson, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, Middlesex, who showed blooms of several Nymphaeas, was recommended an Award of Merit for N. odorata sulphurea grandiflora. The blooms were of large size, cream coloured, with golden centre. The other varieties shown included N. odorata rosea, and N. odorata exquisita, the latter being better coloured than the former.

Messrs. JAMES VEITCH & SONS were awarded an Award of Merit for sprays of the well-known Hunnemannia fumarifolia, with glaucous, much divided Eschscholtzia-like foliage, and bright true yellow coloured, single flowers with reddish stamens or anthers.

Mr. THOMAS S. WARE, Hale Farm Nurseries, Tottenham, made an exhibit composed for the greater part of Dahlia blooms, backed by bunches of various hardy flowers, including some fine varieties of Liliun auratum, Gladiolus, Liliun speciosum, &c. The Dahlia blooms were representative of the Cactus and Pompon sections, and were very bright in colour and good in quality (Silver Banksian Medal).

Bouvardias in a group of considerable size were shown by Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, London. These plants occupied one side of one of the long central tables, fully filling the whole length. The varieties included the well known Alfred Neuner, double white; Priory Beauty, single pink; Jasminifolios paniculata, Reine des Roses, Mrs. R. Green, pink; candidissima, President Cleveland, scarlet; Humboldt, white, with very large segments, also a grandiflora strain of this variety, the flowers as shown being appreciably larger than the type; Maiden's Blush, Alba odorata, jasminiflora, Dazzler, Purity, and Hogarth fl.-pl. In all there were about a score varieties shown. (Silver Flora Medal).

From FURNELL, FURNELL, Esq., Woodlands, Streatham Hill, came a group composed of tuberous rooted Begonias, Fuchsias, Ferns, Liliun speciosum, &c. Some of the Begonias were very fine, and the rest of the plants were suitable specimens for the ornamentation of the conservatory, sitting-room, &c. (Silver Banksian Medal).

Plants and blooms of a dull purple-flowered Carnation

were shown by Mr. JNO. EVANS, Darley Dale, Matlock Bath. It was named Winnie Webb. There was a number of new Dahlias before the Committee from Mr. GREEN, Norfolk Nurseries, Dereham, and other exhibitors, but no award was gained. Mr. GREEN, however, obtained an Award of Merit for Lathyrus grandiflorus albus, of which some fine specimens were exhibited.

Messrs. F. SANDER & Co., St. Albans, exhibited a group of plants of Acalypha Sanderi and of D. Godseffiana.

Messrs. H. CANNELL & SONS, Swanley, had a particularly pretty group of cut flowers composed of Salpiglossis and Scabiosas, with a facing of Gypsophylla paniculata, which, by the way, has never been used at exhibitions so freely as during the last two years. Salpiglossis, though they require rather more than ordinary care, are not seen nearly so frequently in the flower garden as they deserve to be. The varieties shown included flowers of pure yellow, intense purple, various shades of blue and curiously striped blooms of exceeding interest. The varieties of Scabiosas included alba, brick red, purple, purple azurea, and rosea. Some double flowered Gaillardias and excellent Cocks-combs in pots were also shown by Messrs. CANNELL (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, King's Road Nursery, made another tasteful and uncommonly bright exhibit of cut annuals in competition for the Hurst Cup. The most noteworthy of the species shown were Scabiosas, Salpiglossis, single flowered Dianthus, the beautiful yellow flowered Hunnemannia fumarifolia, Schizanthus, Phlox Drummondii, Godetias, Gaillardias, Larkspurs, Coreopsis, Asters, &c. The exhibit was faced with Saponaria calabrica, and Gypsophylla muralis, a pink flowered species.

From Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr., Mr. Bain), came a handsome exhibit of Gladioli. These represented varieties of G. Childii, G. Gandavensis, G. hybridus Nanceianus, and G. hybridus Lemoinei.—They were exceedingly beautiful. The spathes of hybrid Anthuriums, too, were very fine, and the blooms of crested Begonia interesting (Silver Flora Medal).

Messrs. KELWAY & SONS, Langport, Somerset, made one of their great annual displays of Gladiolus spikes. There were something like fourteen dozen spikes of bloom, all illustrative of the choicest varieties, some eight dozen being named. It was difficult to observe in the specimens shown any indication of the drought that has obtained recently, but no doubt the collections of these plants have suffered materially from lack of sufficient rain. The flowers were bold, bright, and as large as can be desired, whilst the varieties, though none were deemed sufficiently distinct for further awards, were very fine (Silver-gilt Banksian Medal).

Orchid Committee.

Present: A. H. Smea, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, J. Gurney Fowler, H. J. Chapman, W. H. Young, J. Jaques, W. B. Latham, W. Cobb, and T. B. Haywood.

Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr., Mr. W. H. White), showed a magnificent specimen of Platyclinis filiformis, with over one hundred of its charming pendulous, slender racemes of yellow flowers—an excellent example of continued good cultivation, the plant having been shown every year in similarly good condition for some years. Sir TREVOR LAWRENCE also showed a plant of the rare Bornean Saccobolium Hendersonianum, with a strong, erect spike of carmine and white flowers, with crystalline surface.

NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland (gr., Mr. Wm. Murray), showed Cattleya × Hardyana "Oakwood variety," a fine home-raised form, with the bright tints and rich crimson-purple lip of the good forms of the imported type; also a flower of his Odontoglossum × crispohalli, a fine form, with cream-white ground, heavily spotted with chocolate colour.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, showed their new Disa × Clivia (grandiflora ♀ × Veitchiana ♂), a worthy addition to the list of good garden hybrid Disas, its flowers in size more nearly resembling D. grandiflora than any of the others. The four plants shown varied somewhat in colour, ranging from rosy-scarlet to purplish-rose (Award of Merit). Messrs. Veitch also showed the singular and pretty Epidendrum × radicans - Stamfordianum (Stamfordianum × radicans), which, like other crosses of E. radicans, adheres closely to the habit of growth of that species. The large terminal head of flowers was yellow, the sepals and petals and tips of the lip reddish-orange, and being spotted and freckled in a similar manner to E. Stamfordianum. Masdevallia × Circe (Veitchiana ♀, Schroderiana ♂), with a rather slender scape, bearing one flower and two buds, the flower orange in colour, with numerous purplish papillae, and in size nearly as large as an ordinary M. Veitchiana; and Cypripedium × Rothschildianovillosum, a singularly intermediate hybrid with yellow ground to the flowers, which bear on the sepals and petals some purplish lines, and on the face of the lip a rose-coloured hue.

G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water (gr., Mr. Morris), showed Cypripedium leucocheilum Mooreanum, a very fine variety, with yellow ground, beautifully marked with purple, and somewhat resembling the fine form Certificated to R. I. Measures, Esq., as "aureum." Mr. Moore also showed two flowers of the Popayan form of Cattleya Trianae flowering at an unusual season.

Admiral Sir H. FAIRFAX, Priorwood, Melrose, N.B., showed a very fine form of Cattleya × Hardyana, and a noble inflorescence of Odontoglossum Harryanum, for which a Cultural Commendation was given.

Messrs. F. SANDER & Co. showed a small group, set up with specimens of their beautiful *Acalypha Sanderiana* and *Draecena Godseffiana*, and comprising the singular feather-lipped *Bulbophyllum barbigerum*, whose delicately-constructed flowers move in a remarkable manner in air currents; the large-flowered *B. grandiflorum*, with singularly hooded flowers of cream-white, freckled with greenish-brown; a pretty hybrid *Cattleya*, with pink flowers spotted with purple; *Cattleya Leopoldi*, two varieties of *Odontoglossum Bictonense album*, *Cattleya velutina*, and other *Cattleyas*.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, staged a small group, in which were *Cypripedium Lawrenceanum* Hyeum, Low's var., in which the yellowish-green of the original form was represented by bright emerald-green; *Laelio-Cattleya* × *elegans* var. *Enfieldense*, of a rich claret-crimson colour. The plant shown was small, and hence there is reason to believe it will become much finer. Messrs. Low also showed the pure white *Cypripedium bellatulum album*, *Lælia* × *Amanda*, *Cattleya bicolor* Wrigleyana, *Sobralia xantholeuca*, *Laelio-Cattleya* × *Aurora*, *Phalenopsis Aphrodite*, *Oncidium Lanceanum*, &c.

WALTER COBB, Esq., Dulcote, Tunbridge Wells, showed the pretty *Laelio-Cattleya* × *intermedia flava*, "Dulcote variety," with clear white sepals and petals, and rich rose-coloured lip.

Mr. THOS. HOGG, Woodside Gardens, Paisley, N.B., showed *Cypripedium* × *Lawrebel*.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, showed *Acineta colossa*, a curious species with flowers somewhat resembling those of *Peristeria elata* (Botanical Certificate).

Fruit Committee.

Present: H. Balderson, Esq., in the chair, and Messrs. G. Bunyard, H. W. Ward, A. Dean, J. H. Veitch, W. Bates, W. Farr, R. Hife, and J. Willard.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited fruits of a new Apple named Langley Pippin, from a cross between Mr. Gladstone and Cox's Orange Pippin. The fruit is of moderate size only, roundish, colour yellow, flaked with red or crimson. It is ripe by the middle of August, and in flavour is very similar to Cox's Orange (Award of Merit). Messrs. Veitch had also a specimen of *Rubus phoenicolasius*, about 9 feet high, pyramidal, and bearing a lot of fruit (Cultural Commendation).

Mr. J. W. MILLER, gr. to Lord FOLEY, Ruxley Lodge, Esher, Surrey, had six excellent dishes of fruits, consisting of Grosse Mignonne Peach, Alexandra Noblesse Peach from orchard-house, Alexandra from open wall, very finely coloured; also three dishes of very fine brown Turkey Figs (Cultural Commendation).

Some fruits from Messrs. T. RIVERS & SON, Sawbridgeworth, were remarkable for the extreme high quality they presented. There were about six dozens of the most tempting fruits of Oullin's Golden Gage, the same number of Late Transparent, and a few of McLaughlin's Gage Plums. The McLaughlin's Gage Plums were from a pot-tree, that has been plucked outside since the fruit set. Then there were Rivers' Early Silver Peach, from a cold-house, and upwards of a dozen wonderfully-coloured fruits of Dryden Nectarine, also from a cold house. Eight very large fruits of Peasgood's Nonsuch Apple completed the collection (Silver Banksian Medal).

A collection of fruit from the Dowager Lady FRAEKE, Fulwell Park, Twickenham (gr., Mr. Rickwood), was awarded a Silver Banksian Medal. It included Black Hamburgh Grapes, two Melons, Morello Cherries, Peaches, Nectarines, Figs, Plums, Apples, Pears, and Red and White Currants; in all about thirty dishes.

A collection of fruits from Messrs. GEO. BUNYARD & Co., Maidstone, including nearly sixty dishes, was given an award of a Silver-gilt Knightian Medal. Apples formed the greater feature, and the numerous varieties were shown in excellent condition, all of them being good in point of size for the present date of the season, and a few of them were remarkable for very fine colour. Pears, Peaches, and Plums, also Early Prolific Filbert Nuts, were all shown well (Silver-gilt Knightian Medal).

The subject of the lecture by M. H. Vilmorin induced several exhibitors to display alpine and other Strawberries.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed plants and a few fruits of Perpetual Strawberry, St. Joseph or rubicunda, a kind of improved alpine variety, with medium-sized, rather acid fruits, and plants of Louis Gauthier, but no ripe fruits of the same.

Messrs. BUNYARD & Co. also showed fruits of St. Joseph. Messrs. LAXTON BROS., Bedford, showed plants of St. Joseph Strawberry in 8-inch pots. Also sprays of fruit and plants in fruit of the "Strawberry-Raspberry," similar to those shown at the last meeting. Sprays of same were shown also by Messrs. HARRISON, Leicester.

Mr. J. HUDSON, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, showed fruits of perpetual fruiting Strawberries, Quatre Saisons, Rouge amelioré or Improved Red, Belle de Meaux. Also of Royal Sovereign, from plants that had been forced in spring, and were planted out in May last (Cultural Commendation).

An Award of Merit was recommended to fruits of a variety of the Currant Tomato shown by Mr. WRIGHT from the gardens of the Society at Chiswick. This is by no means a novelty, though no award has been previously made to the type.

A. T. M. PIPON, Esq., Farningham, Kent, showed some fruits of a capital type of Perfection Tomato, named Beauty of Bark.

Mr. ABBOT, South Villa, Regent's Park (gr., Mr. Kelf), showed some fruits of Sea Eagle Peach, of fine quality, considering they were grown within 2 miles of Charing Cross (Vote of Thanks).

Lecture

ON PERPETUAL FRUITING STRAWBERRIES.

IN the afternoon was delivered a lecture on the above subject by M. Henry de Vilmorin, the famous Paris nurseryman. M. Vilmorin said that by perpetual fruiting Strawberries he did not mean to describe varieties that might occasionally (either through climatal variations or circumstances of cultivation) produce flowers and fruit in the autumn. This amounted to nothing more than unusual or accidental flowering, and might be observed in many of the flowering shrubs. Proceeding to state that only plants having the perpetual flowering character of the alpine or wood Strawberry might properly be called perpetual fruiting, M. Vilmorin went on to describe certain efforts that had been made on the continent and elsewhere to obtain a strain of large-fruited perpetual Strawberries, and further gave particulars of the earliest mention of such a type, referring to some that were so spoken of in America in 1856. M. Vilmorin, however, was disposed to consider the fact that certain varieties had fruited somewhat continuously in America, due more to details in the cultivation given them, than to characteristics possessed by the varieties themselves. Coming to the Strawberries recently distributed by M. Vilmorin's firm, the lecturer gave his own experience of the characteristics of the varieties Belle de Meaux, Louis Gauthier, and St. Joseph. All of these are essentially perpetual fruiting in habit, and they have been proved so in this country; several exhibits of fruits from English growers being handed to the audience for inspection. The fruits are larger than those of the ordinary alpine Strawberry, but they are of much the same character. Saint Joseph appears to be the most popular of them, and the plants are described by M. Vilmorin as dwarfish and depressed in habit, stem short, foliage flat, fruit heart-shaped, of moderate size, scarlet in flesh and externally, sweetly acid, and of rich flavour. This variety ought, said the lecturer, to be in every garden, and it possibly might become a profitable plant for supplying fruits for market. But Belle de Meaux was the best variety for the amateur, because it produces the finest fruit in quality, though its habit of growth lacks strength, and its fruits will not bear ill-usage. The raiser of these perpetual Strawberries, according to M. Vilmorin, will not rest upon what he has already achieved, but will seek to raise others that will be improvements upon his first production. Louis Gauthier is a vigorous grower, has dark thick leaves, and the fruits are white fleshed, solid, and juicy. In the cultivation of these Strawberries M. Vilmorin recommends that the plants be not allowed to bloom in May, when it is hopeless for them to compete with the ordinary Strawberry crop, but from July to September, provided they be mulched liberally and afforded sufficient water, they would be certain to yield well. Mr. Geo. Bunyard (chairman) reminded the audience that like the Wood Strawberry, the Alpine varieties should not be exposed to a great amount of sun.

ISLE OF WIGHT.

DURING last week three exhibitions of fruits, flowers, vegetables, and plants were held in the Garden Isle, out of twenty shows held in a twelvemonth.

NITON.

On Thursday, August 18, Niton Horticultural and Cottage Garden Society held their fourth annual exhibition, under the presidency of Mr. A. Innes-Vine, who is a very popular President, and gives every encouragement to the development of horticulture. The exhibits numbered nearly 400, and were of the usual high standard of excellence attained by the inhabitants of this rural district. The show was visited in the afternoon by Mr. Godfrey Baring, J.P., Chairman of the Isle of Wight County Council, who showed much interest in the various exhibits.

Mr. W. COTTON secured the Isle of Wight Horticultural Improvement Association Certificate for Cultural Merit, with a fine collection of Begonias.

SHANKLIN.

The nineteenth annual exhibition in connection with the Shanklin Horticultural Society was held on Wednesday, August 17, in the beautiful grounds of Rylstone, by permission of M. Spartali, Esq. The exhibits numbered 700, and, considering the character of the season, they were excellent.

FRESHWATER.

The annual exhibition of the Freshwater, Totland, and Yarmouth Horticultural Society was held on Wednesday and Thursday, the 17th and 18th inst., in the grounds of Farringford Park, by permission of Lord Tennyson, the President of the Society.

Two large and well-arranged non-competitive groups were staged by Mr. Russell, gr. to Lord TENNYSON; and Mr. A. W. KIME, F.R.H.S., gr. to Col. PEARSON CROZIER. The exhibits maintained their usual standard of excellence, though they were less numerous than in previous years.

HARROGATE HORTICULTURAL.

THIS show has of late years gained in dimensions in a marked manner, inasmuch as this year the committee were bold enough to venture on a two days' exhibition, with satisfactory results, for the two large tents in which the show was recently held were filled to overflowing with exhibits of

first-rate quality. This is just the height of the Harrogate season, and visitors to the town were present in great numbers.

The competition was keen in most of the classes, but the chief interest centred in the groups. The best group arranged for effect, and occupying a space of 10 feet by 12 feet, was set up by E. B. FABER, Esq. (gr., Mr. W. Townsend), the plants being excellent of themselves, and artistically arranged; 2nd, Mrs. GURNEY PEASE, Woodside, Darlington (gr., Mr. McIntyre), a good group containing nicely-coloured Crotons, but lacking the smart finish of the former one. Five competed. In the circular groups E. B. FABER, Esq., was again 1st, with a nice arrangement; 2nd, Rev. T. SHEEPHANKS (gr., Mr. Timmins).

Special mention should be made of the groups shown by E. B. FABER, Esq., as Mr. Townsend, the head gardener, who took the three 1st prizes, being a local exhibitor, displayed great skill as a cultivator, and also an artistic feeling in grouping.

Specimen Plants.—These formed a good section. For six stove and greenhouse plants Mrs. GURNEY PEASE, Darlington was 1st, the collection including good specimens of *Kentias Codiaums*, *Ixoras*, *Anthurium*, &c.; 2nd, E. B. FABER, Esq. Four stove or greenhouse plants, 1st, Mrs. GURNEY PEASE.

For six ornamental foliage (local), 1st, W. BATEMAN, Esq., who staged good examples of *Kentia Belmoreana*, *Cocos Weddelliana*, *Dasyllirion*, *Phoenix* species, and a good specimen of *Cycas revoluta*.

For four Exotic Orchids, E. B. FABER, Esq., was easily 1st, showing among others a pretty piece of *Cattleya Dowiana*.

Fruit was shown in quantity, and the quality was generally good. A very interesting class was that for a collection of English-grown fruit, to cover a space of 5 feet by 2½ feet. In this class the 1st prize was won by Lord BARNARD, Raby Castle (gr., Mr. J. Tullett, the kinds shown being Grapes, Pine-apples, Cherries, Pears, Peaches, Nectarines, and a Melon; 2nd, W. SHEEPHANKS, Esq., Winsley Hurst (gr., Mr. A. Large), who staged good fruit, but which lacked the good quality in the varieties selected.

For a tray of fruit, to consist of six kinds, Lord BARNARD was again 1st, the collection including grand examples of Black Alicante Grapes.

For a tray of hardy fruit, six kinds, Lord BARNARD was 1st; and 2nd, W. C. STOBART, Esq.

The best two bunches of black Grapes were shown by Lady HAWKE, Wighill Park (gr., Mr. Oates), beautiful, well-finished Black Hamburgh; and the best two bunches of white Grapes came from the same exhibitor; and 2nd, E. B. FABER, Esq.

Vegetables were numerous, and of good quality. For a tray of vegetables, nine kinds, 1st, E. A. BROTHERTON Esq., Arthington Hall; 2nd, Captain SLINGSBY, Scriven Park.

Cut Flowers were plentiful and good, and many bouquets tastefully arranged, and the usual florists' objects were found in some quantity.

Trade exhibits came from Mr. W. BONSALE, Roseville Nurseries; from Mr. E. J. BATCHELOR, Harlow Nurseries; Mr. A. J. HALL, Harrogate, and others. These were no competitive.

MARLOW HORTICULTURAL.

AUGUST 10, 11.—The fourth exhibition of this flourishing Society was held on the above dates, on the conveniently situated cricket-ground. Favoured by fine weather and other attractions, the show-ground was crowded with visitors, who were well repaid, in that the exhibition was a great improvement on any previously held.

Groups of plants arranged for effect were a leading feature. Mr. T. Blackmore, gr. to R. HAY-MURRAY, Esq., Spinfeld, Marlow, winning 1st, with a very bright and lightly arranged group, in which *Codiaeums*, *Palms*, *Lilium speciosum*, *Francoa ramosa*, and similar plants distributed over a groundwork of Maidenhair Fern formed the chief constituents; and 2nd, Mr. Gibson, gr. to R. W. HUDSON, Esq., Danesfield.

Medium-sized plants were staged in the specimen-plant classes by Mr. Wood, gr. to Lord BOSTON, Hedsor, who was 1st for three; other successful exhibitors being Mr. BLACKMORE, and Mr. Shape, gr. to Sir W. CLAYTON, Harleyford.

Fruit and Vegetables were extensively shown, the latter especially being excellent, and the competition in both sections of a keen character. For a collection of fruit, Mr. R. Gibson, gr. to R. GRIFFIN, Esq., was 1st; 2nd, Mr. LAWRENCE. With two finely-coloured bunches of Madresfield Court, Mr. BLACKMORE was 1st, for black Grapes; 2nd, Mr. Jordan, gr. to E. RILEY, Esq.; and for white, the latter was 1st, with good bunches of Buckland Sweetwater. Mr. Wood was 1st in a Melon class, in which the competition was strong, but the flavour of the fruits shown generally bad.

Mr. JORDAN was 1st with a fine collection of vegetables; 2nd, Mr. Dover, gr. to H. W. DOYNE, Esq. Numerous classes were provided for amateurs and cottagers, who exhibited well.

A special feature of the show was the non-competitive exhibits. Messrs. VEITCH & SONS contributed a very large collection, running the whole length of the largest tent, of cut flowers, of herbaceous and annual plants—an imposing exhibit.

Mr. C. TURNER, Slough, put up an extensive exhibit of cut Roses in splendid variety, including grand bunches of La France, Mrs. J. Laing, Souvenir de S. A. Prince, The Bride, Marie Van Houtte, Victor Hugo, K. A. Victoria, Ulrich

Brunner, and Captain Christy, among many others. Included in this exhibit were also fine stands of Cactus Dahlias and Carnations.

Mr. R. OWEN, Maidenhead, put up a group of large-flowered Cannas, wreaths, crosses, &c. Mr. E. F. SUCH, Maidenhead, herbaceous flowers and Dahlias.

DEVON AND EXETER HORTICULTURAL.

AUGUST 19.—The August exhibition, being the 187th which the society has held, took place in the grounds of Northernhay on Friday, 19th inst., in delightful weather, an agreeable change to the terrific storm of the previous day.

Among the more prominent features were the groups of plants arranged for effect, in an oval, with diameters of 11 feet and 15 feet. These were arranged very tastefully, and Mr. LOCK and Mr. ROWLANDS put up a very effective display. The Palms of the Rev. HAMILTON GELL, the Tree Ferns of Major BROCK, specimen Codiaums, Cycads, &c., adding greatly to the general effect in the tents.

Cut Flowers.—Cut flowers of herbaceous perennials, of Dahlias, Gladiolus and Roses, the capital lot of fruit, and the excellent quality and quantity of vegetables, rendered this show one of the best hitherto held by this Society.

For twenty-four Dahlia blooms (open), show and fancy, distinct, Messrs. JARMAN & Co. were 1st, with an interesting stand of clean and bright blooms; Mr. W. B. SMALL coming in as a very close 2nd. For twenty-four varieties of Cactus Dahlias, double, distinct, 1st, the DEVON CHRYSANTHEMUM SOCIETY; 2nd, Messrs. JARMAN & Co. These stands were full of showy and beautiful flowers.

J. RAYMONT was 1st for twelve Dahlia blooms, double, distinct; and H. HAMMOND SPENCER 1st for twelve double-flowered Cactus Dahlias; also for six Cactus, similar.

For six varieties of Dahlias, Pompon or bouquet, made up in bunches of three blooms with foliage, C. S. EADY was 1st, and General SPURWAY 2nd.

For forty-eight spikes of Gladiolus, in not fewer than twenty-four varieties, Mr. F. H. FOX was 1st, and Mr. A. KNELL 2nd.

Groups.—For a miscellaneous collection of plants, arranged for effect in an oval 11 feet by 15 feet (open class), Mr. G. LOCK, gr. to B. HILL, Esq., Crediton, and Mr. Rowland, gr. to Major BROCK, Exeter, put up showy and elaborate groups; the former took the 1st prize, Mr. Rowlands being 2nd. In the general prize list, the same competitors appeared when the decisions were reversed, Mr. ROWLAND being 1st, Mr. LOCK 2nd. In a class for similar display in an area measuring 11 feet by 8 feet, G. BAKER, gr. to Lady DUCKWORTH, and W. F. RICHARDS were respectively 1st and 2nd.

Specimen plants.—For twelve stove and greenhouse plants, six in flower and six foliage, distinct. W. BROCK was 1st with large plants, the foliage plants being well coloured Codiaums, Palms, and Cycas revoluta, and the flowering plants Dipladenia Brearleyana, Allamanda nobilis, and A. Hendersoni, Ixora Prince of Orange, and Clerodendron Balfourianum; Mr. BARNES, gr. to Rev. HAMILTON GELL, was 2nd.

For six stove and greenhouse plants, three to be in flower and three foliage, the same exhibitors competed, and were placed in similar positions. Mr. BARNES was awarded 1st for six stove and greenhouse Ferns, including an immense Nephrolepis davalloides, Davallia Mooreana, and D. filiensis, Adiantum cardiophyllum; Mr. ROWLANDS 2nd, having a very distinct plant in his group, viz., Angiopteris elegans?, Dicksonia antarctica, and others. Some very good Fuchsias were staged, and if these plants could have had a little more time and greater space afforded them, they might again form an attraction at our summer shows. G. R. JOHNSON was awarded 1st, and Rev. L. W. FREEMAN 2nd. Mr. T. KNAPMAN was 1st for six Lycopodiums.

Gloxinias and Begonias.—For six Gloxinias, showing nice plants full of flower of the pure white Her Majesty, G. R. JOHNSON was 1st; Rev. E. HEATHCOTE, with nice plants of various colours, 2nd. Begonias were but moderate, for either the heat had spoiled them or they had travelled badly. For six double-flowered varieties, A. KNELL was 1st; the Rev. E. HEATHCOTE 2nd. For three Mr. A. KNELL was again 1st, Lady DUCKWORTH 2nd. For six Begonias, single-flowered, and three ditto, A. KNELL again came to the fore; the 2nd prize for six again falling to Lady DUCKWORTH. Mr. G. R. JOHNSON showed fine plants of foliage Begonias, and was awarded 1st. Mr. BROCK showed some capital Dracaenas, just beating the Rev. A. H. GELL, who was 2nd.

FRUIT.

The competition was keen in these classes, and the quality excellent throughout. The Grapes, although no sensational bunches appeared, were excellent as regarded colour and finish, and some of the Muscats quite up to the highest mark as far as colour was concerned.

For a collection of ten dishes, Mr. LOCK was 1st, showing Muscat of Alexandria and Black Hamburgh Grapes, Royal George Peaches, Elruge Nectarines, Cherries, Plums, Apricots, Melons, &c., in perfect form. J. BRUTON came 2nd with Muscat of Alexandria and Madresfield Court Grapes, Melons, Cherries, Peaches, Nectarines, Figs, &c.; Admiral PARKER was 3rd with four varieties of Grapes, and eight dishes of other fruits, a doubtful exhibit.

For six dishes of fruit, H. HAMMOND SPENCER was 1st; Rev. A. HAMILTON GELL 2nd.

Grapes.—Mr. W. A. SANFORD was 1st with Black Hamburgh Grapes, and J. WASHINGTON 2nd. Some capital

bunches appeared among these classes, Mr. LOCK was 1st with splendid Muscat of Alexandria, H. HAMMOND SPENCER taking 2nd. Mr. LOCK was again 1st with Madresfield Court. Admiral PARKER was 1st with Buckland Sweetwater. Rev. A. HAMILTON GELL securing 1st honours for any other variety with splendid bunches of Black Alicante; F. M. CANN 2nd, with Foster's Seedling.

Miscellaneous.—Plums, Cherries, Melons, Apricots, and Figs were well shown. For a dish of six Peaches, Mr. R. B. JAMES was 1st, with Barrington, of unusual fine size; and Admiral PARKER was 2nd. For six Nectarines, many dishes were shown of very nice fruit, 1st, W. A. SANFORD; 2nd, H. HAMMOND SPENCER. Small bush fruits and Tomatos were well represented.

VEGETABLES.

The tent set apart for these products was well filled. Mr. MAIRS certainly excels in this branch, and again he has proved himself the victor. For a collection of twelve kinds, he was the winner of the Silver Cup, showing, in splendid condition, Carrots, Leeks, Cauliflowers, Parsnips, Onions, Beans, Turnips, Tomatos, Celery, Cucumbers, Onions, Peas, and Potatos—a grand lot. Mr. LOCK, who came 2nd, had a fine collection, but could not equal the 1st prize stand at any point. Here were Brussels Sprouts, shown on the stems; Onions, Cauliflowers, Carrots, Beans, Parsnips, Leeks, Peas, and Potatos.

For six kinds of Vegetables, Mr. BAKER was 1st; Lady WALROND, 2nd. Mr. LEY was 1st for a brace of Cucumbers. Potatos of good quality were shown in the classes set apart for them.

Non-competitive Exhibits.—The EXETER NURSERY COMPANY had a fine display of Allamandas, Crotons, Ixoras, Bougainvilleas, Palms, Ferns, &c., beautifully arranged, and relieved with wreaths, sprays, crosses, bouquets, &c. Mr. W. GODFREY a quantity of Carnations in pots and as cut flowers, among the latter were Lady D. Long, Flora Hill, pure white; Miss Stevens, Queen of the Exe, Exmouth Gem, and Mrs. McBurnie. Single Dahlias, single-flowered Asters, Cactus Dahlias, and Cannas. Cannas, Dahlias, Gladiolus, &c., were staged by the Messrs. R. VEITCH & SONS, Exeter, also some boxes of rock-work, Alpines, &c. Messrs. CURTIS, SANFORD & Co. had a fine display of Roses and other cut blooms. Messrs. WALTERS, of Exeter, had also some good show-stands of Roses. Messrs. JARMAN & Co. staged very fine double and single Begonia blooms. Messrs. TUPLIN & SON, Newton, had some beautiful Carnations, for the cultivation of which they are well known in the West. Sweet Peas were shown by Messrs. CLARK & SONS, Wellington; Mrs. MACALISTER had a dozen very large blooms of Romneya Coulteri; and Mr. SLIDE, gr. to Lord POLLIMORE, staged a group in which a species of Cotton plant, in bloom and pod, stood among plants of Pancratium, Bougainvilleas, Ferns, Palms, &c.

TROWBRIDGE HORTICULTURAL.

AUGUST 17.—A society which has held, as the Trowbridge Society has done, an unbroken series of forty-nine exhibitions, is not only a vital one, but it possesses that which characterises permanency. Notwithstanding that it has to trust very largely to gate-money, the shows usually meet the expenditure if the weather be fine; that of Wednesday, the 17th, was brilliant, there was a fine show, and visitors were numerous.

The Roses formed a leading feature, and seldom are better Roses shown in the middle of August than those we saw at Trowbridge. Next year the Society will celebrate its jubilee, and steps are already being taken to make the event worthy of the town; special prizes are being offered, and a Jubilee Fund is being raised.

Stove and Greenhouse Plants.—These were well shown, for here, as at Taunton, evidence is noted of considerable improvement in the cultivation of large specimen plants. The best nine flowering plants came from Mr. H. Matthews, gr. to Sir W. R. BROWN, Bt., Trowbridge, a young man who is fast taking a leading position in the west of England. He had a fine piece of Erica Eweriana superba, also E. Turnbulli, splendidly-grown and flowered examples of Dipladenia amabilis and Brearleyana, a grand piece of Ixora coccinea, fine in growth and flower; Allamanda nobilis, Stephanotis floribunda, Bougainvillea glabra, and a fine Anthurium Scherzerianum. Mr. G. Pymm, gr. to Mrs. GOULDSMITH, Trowbridge, was 2nd, having well-grown and freely-bloomed plants, among them Erica ampullacea Barnesii, an unusually fine specimen of Plumbago capensis, Clerodendron Balfourianum, a capital piece of Bougainvillea glabra, &c.; Mr. TUCKER, Hilpertons Marsh, was 1st with six specimens, having a well-balanced lot, such as Bougainvillea Sanderiana, Statice Gilberti, a fine Dipladenia Brearleyana, Ixora Morsei, and two others; Mr. H. MATTHEWS came 2nd, having Allamanda Williamsii, Dipladenia amabilis, Bougainvillea Sanderiana, &c., a very good half dozen. Mr. TUCKER, who appeared to have put his strength into the smaller classes, was 1st with three fine specimens, they were Dipladenia Brearleyana, Ixora Tuckeri, and Bougainvillea glabra; Mr. S. Ager, gr. to Mrs. MACKAY, Trowbridge, was 2nd.

The best specimen plant was a remarkably fine Erica McNabiana rosea from Mr. G. TUCKER, a specimen which recalled the old days of Heath culture. Mr. G. PYMM coming 2nd with a very nice half specimen of Erica semula. The

best recently-introduced new plant was the variegated Abutilon Swaetzii, shown by Mr. PYMM.

Mr. MATTHEWS was the only exhibitor of four Orchids, which, however, were good for the time of year. He had Aërides odorata, Cattleya gigas, Dendrobium Schroderi, and Cattleya gigas.

Trowbridge fully maintained its old reputation for specimen Fuchsias. Mr. GEORGE TUCKER was 1st with six fine examples; he had of dark-flowered varieties, Diamond Jubilee, Charming, and Doals' Favourite, and of light ones, Western Beauty, a very fine, free sort; Arabella, and Mrs. Bright; Mr. G. BRIDGEMAN, gr. to E. R. TROTMAN, Esq., Frome, was 2nd. Mr. TUCKER was also 1st with four varieties, having Final and Charming, dark; Surprise and Mrs. Bright, light; Mr. BRIDGEMAN was again 2nd. Amateurs and working-men also showed Fuchsias in fours, and very good plants, too, well grown and bloomed.

Tuberous-rooted Begonias are usually remarkable for good quality at Trowbridge; Mr. G. TUCKER took the 1st prize in the class for six singles, as well as for six double-flowered plants; Mr. G. PYMM being 2nd, with single; and Messrs. W. J. STOKES & SON, Hilpertons, with double-flowered varieties. Some very excellently grown Gloxinias were shown. Here again Mr. TUCKER was 1st, and Mr. S. Ager, gr. to Mrs. MACKAY, Trowbridge, 2nd. Some specimen zonal Pelargoniums were shown in several classes, all well grown and abundantly flowered; while the quality of the Cockscombs was decidedly better than is generally observed nowadays. There were bold and striking collections of nine fine-foliage plants, Mr. H. MATTHEWS being 1st with a Kentia australis, three fine Codiaums, viz., Reidi, Weismanni, and Baron James Rothschild; a large Phormium tenax variegatum, &c. Messrs. E. COLE & SONS, of Bath, were 2nd.

Caladiums were seen in large and vigorous specimens. Mr. H. MATTHEWS was 1st, and Mr. G. PYMM 2nd; while with Coleus Mr. MATTHEWS came in 1st, with finely-grown bushes; Mr. H. KIFF, gr. to J. KEMP, Esq., Trowbridge, was 2nd, with rather brighter-coloured plants, but their foliage not so vigorous.

Ferns and Mosses were shown in collections of fifteen, and there were five entries. Though the specimens were not very large, they are representative of some of the best plants of the kind grown, and they formed quite a large bank. Mr. G. TUCKER was 1st; Messrs. W. STOKES & SON 2nd.

Groups of Plants arranged for effect are necessarily small, owing to the small width of the tents. Mr. G. PYMM was 1st with an arrangement on 50 square feet, an excellent lot of plants artistically put together; Messrs. E. S. COLE & SONS were 2nd. Mr. P. HUTH, Freshford, had the best of the smaller groups.

Cut Flowers, Roses.—A very prominent subject in the cut-flower classes was the Roses. Mr. J. MATTOCK came from Oxford with a very fine lot of blooms for the time of year, and literally carried everything before him; his flowers were fresh, full, and bright in colour. Maréchal Niel, which he had in fine character, was rich in colour, and his Teas were excellent. With twelve varieties, three trusses of each, Mr. MATTOCK was 1st, and Dr. BUDD, Bath, 2nd.

With thirty-six and twenty-four varieties, Mr. MATTOCK also led the way.

Mr. MATTOCK's 1st prize box of twenty-four Teas and Noisettes, in not fewer than twelve varieties, was remarkably good, the chief varieties Maréchal Niel, Catherine Mermet, Madame Hoste, Maman Cochet, Souvenir de S. A. Prince, and 2nd, Mr. MATTOCK, Headington, who had blooms only just inferior.

Some creditable blooms were shown by amateurs and working-men. Cut flowers, in twenty-four varieties, brought the usual stove and greenhouse subjects. Mr. H. MATTHEWS was 1st with a fine collection.

Dahlias.—The best twenty-four blooms came from Mr. J. WALKER, of Thame, but by an error of judgment Mr. G. HUMPHRIES was placed 1st and Mr. WALKER 2nd, which quite surprised the two exhibitors. Mr. WALKER had well-finished fresh blooms of S. Mortimer, Buttercup, Mrs. J. Greaves, William Rawlings, H. Keith, Florence Tranter, Nubian, Miss Cannell, John Wyatt, A. Rawlings, R. T. Rawlings, and J. Standish. In Mr. Humphries' stand was a promising soft yellow self named Klondyke.

Messrs. J. CRAY & SON, Frome, had the best twelve; Mr. F. LINDSAY, also of Frome, was 2nd. Mr. G. HUMPHRIES was 1st with twelve very good Fancies for the season, chief among them being Hercules, Mr. Saunders, Frank Pearce, Rev. J. B. M. Camm, Mabel, Dazzler, Comedian, Lottie Eckford, &c.; Mr. J. WALKER was 2nd. Mr. J. BURGESS, Kingswood, had the best twelve single Dahlias in bunches, all good standard varieties; Mr. THOS. CARR was 2nd.

Mr. J. WALKER was 1st with twelve Pompon varieties, showing neat bunches; Messrs. CRAY & SON were 2nd. A charming stand of twelve varieties of Cactus Dahlias in bunches won the 1st prize for Mr. G. HUMPHRIES. He had, in fine condition, A. Vesey, Cinderella, Starfish, Harmony, Daffodil, Annie Turner, Arachne, Mary Service, &c. Messrs. CRAY & SON were 2nd.

Hollyhocks were remarkably well shown by Mr. SMITH, Kingswood; Gladioli were shown in spikes of twelve, the best coming from Mr. F. HOOPER, Bath, who was also 1st with twenty-four Pansies, and also with twelve Carnations and twelve Picotees, some very good blooms, owing to the lateness of the season, being staged.

Table Decorations were nicely executed, and they generally took the form of centre-pieces; but Miss NELLIE RAWLINGS,

who took the 1st prize, set up a square arrangement for the centre of a dinner-table, working it out nicely with soft-tinted blossoms of German Scabious and appropriate foliage; Messrs. E. S. COLE & SON were 2nd.

FRUIT.—There was, as usual, good fruit, Mr. W. STRUGNELL taking the 1st prize with ten varieties, having in good character Alnwick Seedling and Muscat of Alexandria Grapes, Belle-garde Peaches, Pine-apple and Stanwick Elruge Nectarines, Plums, Figs, &c. Mr. GEO. PYMM was 1st with six kinds, having Black Hamburgh and Muscat of Alexandria Grapes, Royal George Peaches, Lord Napier Nectarine, Apples, and Melon; Mr. W. STRUGNELL was 2nd. Mr. C. BULL, Crediton, was awarded 1st prize for a Smooth Cayenne Pine.

Mr. A. YOUNG, The Gardens, Marston, had the best two bunches of Black Grapes other than Muscats, having Gros Maroc; Mr. J. Dole, gr. to J. MARSHALL, Esq., Bristol, was 2nd with the same. The best two bunches of Black Muscats were Madresfield Court from Mr. F. Smith, gr. to the Bishop of Salisbury; Mr. STRUGNELL was 2nd with the same. Mr. A. YOUNG was the only exhibitor of two bunches of White Muscats, staging very good Muscat of Alexandria. The best two bunches of any other white were Buckland Sweetwater from Mr. F. SMITH. Melons were as usual abundant.

There were good Apricots. Mrs. EATON, Bradford-on-Avon, was 1st, with Moor Park. Mr. H. Clack, gr. to C. E. COLSTON, Esq., M.P., Devizes, had the best dish of Peaches, showing fine Violette Hâtive; Mr. A. G. HAYMAN, Frome, was 2nd, with Barrington. Mr. G. PYMM had the best dish of Nectarines, having Pineapple in very fine form.

The two best dishes of dessert Apples came from Mr. F. SMITH. They were Beauty of Bath and Red Astrachan; Mr. E. FISHER was 2nd, with the former and Irish Peach, in each case the fruit was excellent. Mr. GEO. GERRISH, Broughton Gifford, had the best two dishes of culinary varieties—Eckliuville and Emperor Alexander; Mr. E. HALL was 2nd, with Lord Suffield and Warner's King, clear in the skin and of fine size. Pears were represented by Jargonelle Bon Chrétien, and Souvenir du Congrès. Mr. F. SMITH was 1st, with two dishes. Nuts and Filberts were also well shown.

The best table decoration of fruits and flowers in the form of an epergne, came from Mr. C. YOUNG, Trowbridge, who also had the best table decoration, occupying 6 feet by 4 feet; Messrs. E. S. COLE & SON were 2nd.

The Special Prizes offered by Messrs. SUTTON & SONS, E. WEBB & SONS, and others, brought fine vegetables, and they appeared in many classes for market gardeners, cottagers, working-men, and others.

Miscellaneous Collections.—Chief among these was a collection of garden Roses, especially of the newer type, which was set up by Messrs. G. COOLING & SONS, of Bath. It was a source of great attraction in the principal cut-flower tent.

EYNSFORD HORTICULTURAL.

AUGUST 18.—On Thursday evening, at the Board School, Eynsford, the prizes gained at the recent horticultural show were distributed to the successful exhibitors.

The proceedings commenced with a meat tea, to which nearly 100 members of the society sat down. Mr. H. CANNELL, sen., presided, and he was supported by the following ladies and gentlemen: Miss Allinson, the Rev. J. Smith, Messrs. E. D. Till, W. P. Wright, R. Cannell, J. T. Tiesdale, Phillips, and others. Mr. H. Cannell was elected to the chair, and amongst the other gentlemen on the platform were: Messrs. E. D. Till, R. Cannell, W. P. Wright, Green, W. A. J. Foster, and L. Barber, the hon. sec.

The prizes for poultry were presented by Mr. R. Cannell; those for horticulture by Mr. W. P. Wright, horticultural instructor to the Kent County Council; and those for topiary work by Mr. Till. The last named gentleman in the course of his remarks said, that at the beginning of the year things looked in a very gloomy condition, and it was feared they would finish the season with a balance on the wrong side; but thanks to the untiring efforts of Mr. Barber and Mr. Cannell, the income had been increased from £58 to £82. He concluded by stating the need for more local support.

ROYAL ABERDEEN HORTICULTURAL.

AUGUST 18, 19, 20.—This Society, which was instituted in 1824, held its Annual Show on the above dates, in the beautiful grounds of Duthie Park, and the weather being favourable, the show was well patronised.

Three large marquees were filled with exhibits, and the classes devoted to amateurs and to cottagers, or the working-class as they are termed here, were deserving of much praise, for many of them were well filled, and the exhibits were of more than average merit; this was especially noticeable in plants. Fuchsias four feet high by three feet through, loaded with bloom, zonal and variegated Pelargoniums, and choice British Ferns, were nearly equal to those staged by professional gardeners.

Non-competitive.—Three smaller tents were occupied by the trade, and the exhibit of Messrs. BEN REID & Co., Aberdeen, was the first approached, viz., a quantity of choice shrubs in pots arranged on the grass outside, and on the tables inside were exhibited showy banks of cut flowers including Gladioli, Carnations, Sweet Peas in variety, herbaceous cut flowers and plants. Wreaths, crosses, and other floral decorations were arranged at one end.

Messrs. JAMES COCKER & SONS exhibited splendid Roses, including grand blooms of Her Majesty, set up in baskets of

moss, surrounded with Maidenhair Ferns. Tea and Polyantha Roses were also well shown in bunches. The side tables were adorned with decorative plants and a large collection of herbaceous cut flowers; they also exhibited handsome bouquets of Carnations, Roses and Liliums, and wreaths and crosses. In the centre of this tent was some dinner-table decoration, in which Coreopsis, blue Cornflower, and yellow and white Iceland Poppy were tastefully set up. Messrs. W. SMITH & SONS, Exchange Seed Warehouse, Aberdeen, occupied the end of one large marquee; they had a large mirror in the centre, draped with Smilax, and small Palms, Ferns, and foliage plants around it, with wreaths, bouquets, and crosses arranged in front; on one side stove and greenhouse plants, and on the other, herbaceous flowers and Sweet Peas.

Messrs. DOBBIE & Co., Rothesay, exhibited, in addition to herbaceous flowers, a good collection of Cactus Dahlias, among them being Ensign, Fantasy, Star Fish, and Britannia. Sweet Peas were well set up in loose bunches in small glasses, and included Prince Edward of York, Triumph, Primrose, Firefly, Stanley, Blanche Burpee, and Emily Henderson. Mr. J. SMELLIE, Pansy Gardens, Bushby, N.B., staged Dahlias, Pansies, and Violas in good form.

Competitive Classes.—In the competitive classes, plants, fruit, and vegetables were well shown; but notwithstanding the fact that the entries close six clear days before the show, no class cards were provided for the exhibitors, and visitors to the show had to guess in what class the exhibits were shown in, and to whom they belonged, except in cases where the exhibitors had furnished their own printed cards. When a secretary has carefully made up his class-books from the entries, it is an easy matter with clerical assistance to write out the cards to correspond with the book, together with the name and address of the exhibitor; a space left on the card for a small prize slip would be much better than the large prize cards used at Aberdeen, as these were noticed in some of the classes for single dishes of fruit to lay on the exhibit, consequently the best samples were completely hidden from view.

Roses were not extensively shown, but those staged by Messrs. D. & W. CROLL, Dundee, and Messrs. ADAM & CRAYNELL were superb; the latter gained the premier award for twenty-four Teas, which contained good blooms of Madame Hoste, Souvenir de Thérèse Levet, Catherine Mermet, Bridesmaid, Cleopatra, Amazone, Ethel Brownlow, Francisca Kruger, Innocente Pirola, Jean Ducher, Luciole, Madame Cusin, Madame Willermoz, Rubens, Souvenir de S. A. Prince, and The Bride. Messrs. CROLL were a very close 2nd, and secured the 1st award for thirty six H.P.'s; in their stand were finely developed blooms of Ulrich Brunner, A. K. Williams, Helen Keller, Horace Vernet, Mrs. John Laing, and Dupuy Jamain.

Mr. J. Proctor, gr. to Sir W. HENDERSON, Bart., Devanah House, was the only exhibitor with a circular group of plants 10 feet in diameter—this was artistically arranged; a graceful Cocos mounted on a rustic pedestal was employed for the centre, and over a ground-work of light Ferns were placed Gloxinias, Disas, Masdevallias, Pendorbiums, Oranges, Clerodendron fallax, with graceful plumes of Celosias rising above them, with bright-coloured Crotons and Pandanus mounted on stands, clothed with Asparagus decumbens.

Mr. PROCTOR was placed 1st for six stove and greenhouse plants, but Mr. J. Macdonald, gr. to Mrs. CROMBIE, Balgownie Lodge, ran him very closely, having larger flowering specimens, but a trifle weaker in foliage-plants; the latter was 1st for a single specimen foliage-plant. Mr. A. Howie, gr. to J. S. GAMMELL, Esq., had the best flowering-plant in Disa grandiflora, with three dozen blooms.

Mr. W. Ogg, gr. to Miss TAYLOR, Morkon, staged a grand lot of six single Begonias, strongly grown, and well bloomed; he also had the best six double varieties, good plants, but they were arranged on the ground, and could not be seen to advantage.

Pelargoniums and Fuchsias were well staged by various exhibitors, as were cut flowers of Dahlias, stove and greenhouse flowers, hardy herbaceous, and annuals.

An effective class was one provided for a collection of twenty varieties of cut-flowers and foliage bedding-plants, including annuals best adapted for flower-garden decoration, each sort in bunches and in pots. Several good collections were put up; Mr. J. MACDONALD was a creditable 1st, with Lobelia cardinalis, Double White Stock, Begonias, Salpiglossis, Godetias, Gaillardias, Chrysanthemums, Carnations, Antirrhinums, Sweet Sultan, Sweet Peas, Tropaeolum, Ageratum, Linaria, Calliopsis, Violas, Asters, Mignonette, blue Lobelia and tricolor Pelargoniums.

FRUIT occupied one central table. For nine dishes Mr. A. Reid, gr. to H. R. BAIRD, Esq., was 1st, having good Muscat Grapes, Peaches, Nectarines, Melon, Strawberries, and Cherries. A good collection had to be disqualified owing to the exhibitor disregarding the distinction between "kinds" and "varieties," two dishes distinct varieties but not more than two of any "kind" were allowed, and he having staged two fine dishes of Peaches, could not add another of Nectarines without being disqualified. [Nectarines and Peaches are considered by the Royal Horticultural Society to be for competition purposes distinct "kinds" of fruit. Ed.] Grapes and hardy fruits, such as Raspberries, Strawberries, Gooseberries, Currants, and Cherries occupied considerable space.

The competition in some of the vegetable-classes was not very keen. Mr. J. Grant, gr. to Mrs. CRAWFORD LESLIE, Rothie Castle, was 1st for a collection of eight varieties. G. H. C.

MARKETS.

COVENT GARDEN, AUGUST 25.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms	3 0-4 0	Orchids:—	
Carnations, pr. doz.		Cattleya, 12 bms.	5 0-8 0
blooms ...	1 0-3 0	Odontoglossum	
Encharis, per dozen	2 0-4 0	crispum, 12 bms.	2 0-4 0
Gardenias, per doz.		Pelargoniums, scar.	
blooms ...	1 6-3 0	let, per 12 bun.	3 0-5 0
Gladioli, white, doz.		— per 12 sprays ...	0 4-0 6
sprays ...	0 8-1 0	Roses, Tea, per doz.	0 6-1 0
Lilium Harris, per		— yellow (Pearls),	
dozen blooms ...	2 0-4 0	per dozen ...	1 0-2 0
Lily of the Valley,		— pink, per dozen	1 6-2 0
dozen sprays ...	1 0-1 6	— Safrano, p. doz.	1 0-2 0
Maidenhair Fern,		— red, per dozen	0 6-1 0
per 12 bunches ...	4 0-8 0	Stephanotis, doz.	
Mignonette, per 12		sprays ...	1 0-1 6
bunches ...	2 0-4 0	Tuberose, 12 blms.	1 0-1 6
		ORCHID-BLOOM in variety.	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	4 0-12 0	Foliage plants, per	
Aspidistras, p. doz.	12 0-30 0	dozen ...	12 0-36 0
— specimen, each	5 0-15 0	Heliotropes, p. doz.	4 0-6 0
Calceolarias, per doz.	5 0-7 0	Hydrangeas, various,	
Celcius, per doz.	3 0-4 0	per doz. ...	10 0-18 0
Crassula, per doz.	12 0-24 0	Liliums, various,	
Dracenas, each ...	1 0-7 6	per dozen ...	12 0-3 0
— various, p. doz.	12 0-24 0	Marguerites, p. doz.	6 0-12 0
Evergreen shrubs,		Mignonette, p. doz.	4 0-6 0
in variety, p. doz.	6 0-24 0	Palms, various, ea.	2 0-10 0
Ferns, small, per		— specimens, ea.	10 6-84 0
dozen ...	1 0-2 0	Pelargoniums, doz.	9 0-12 0
— various, p. doz.	5 0 12 0	Rhodanthes, p. doz.	3 0-6 0
Ficus elastica, each	1 0-7 6	Scarlets, per doz.	3 0-6 0
Fuchsias, per doz.	5 0-8 0	Spiraeas, per dozen	6 0-9 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Keswick,		Greengages, foreign,	
bush. ...	3 6-4 0	sieve ...	3 6-5 0
— Quarrendens,		— English, sieve.	3 6-5 0
sieve ...	5 0-6 0	— boxes, various.	1 0 1 2
— Suffield, bush.	5 0-6 0	Melons, each ...	1 0-1 6
— Various, bush.	3 0-4 0	Nectarines, doz.	8 0-12 0
Apricot, English,		— second quality	2 0 4 0
per doz. ...	1 0-2 0	Peaches, per doz.	
Bananas, bunch ...	8 0-10 0	(according to	
Figs, per dozen ...	1 3-2 0	size) ...	8 0-12 0
Grapes, English,		— Second quality	2 0-4 0
Hamburgh, lb.	1 3-1 6	Pears, Williams,	
— second quality	0 8-10	foreign, in ease,	
— Belgian, per		36 51, 48 51, 56	4 6 —
lb. ...	0 6 —	Plums, Gesbons, in	
— Channel Isles,		sieve ...	1 6-1 9
per lb. ...	0 6-0 8	— Blue, various,	
— Muscats, per		in sieve ...	3 3-
lb. ...	1 3-2 6	— Victorias, sieve	6 0 —

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Mint, per dozen	
per doz. ...	1 6-2 6	bunches ...	2 0-3 0
Beans, English		Mushrooms, per lb.	0 6-1 0
(Dwarf), per		Onions, Dutch, bag	3 0 —
bushel ...	2 0 —	— green, per doz.	
— Scarlet, in bus.	1 6-2 0	bunches ...	1 6 —
— Broad, bushel.	1 0 —	— Valencia and	
Beetroots, new, per		Oporto, cases ...	5 0-5 6
dozen bunches	3 0-4 0	Picklers in	
— p. tally of 60 ...	4 0 —	bags ...	3 0-4 0
Cabbage, open, doz.	1 0-1 3	Parsley, per dozen	7 0 —
— open, p. tally ...	4 0-6 0	— sieve ...	1 0 —
Cauliflowers, Eng-		Peas, bushel ...	2 6 4 0
lish, per dozen	1 0-1 6	Potatoes, Bedford	
Cress, doz. punnets	1 6 —	and Lincoln	50 0-80 0
Carrots, New, bun-		— Kent Kidneys,	
ches, per dozen	1 0 —	per bushel ...	2 6 —
— washed, in bags	3 0 —	Radishes, Round,	
Celery, new, bundle	1 0 1 3	breakfast, per	
Cucumbers, p. doz.	1 6-3 0	dozen bunches	
Endive, English,		(home grown) ...	1 3 —
per score ...	1 0 —	Salad, small, pun-	
— French, doz. ...	2 0 —	nets, per dozen	1 3 —
Garlic, new, per lb.	0 3 —	Shallots, good, per	
Horseradish, foreign		cwt. ...	12 0 —
per bundle ...	2 6-3 6	Spinach, 3-bushel ...	1 0 —
— New English ...	2 6-3 0	Tomatoes, English,	
Leeks, new, dozen		per lb. ...	0 3 —
bunches ...	1 6 —	— Belgian, cases,	
Lettuce, Cabbage,		good ...	1 0-2 0
home-grown, per		— Channel Isles,	
doz. ...	1 6 —	per lb. ...	0 2 —
— Paris Cos, home-		Turnips, new Eng.	
grown, per score	2 0-3 0	per dozen ...	2 0-3 0
Marrows, Vege-		— in bags, good ...	2 0 —
table, per dozen	1 0-2 0	Watercress, p. doz.	
— per pot ...	2 6-3 0	bunches ...	0 4-0 6

REMARKS.—Large supplies of Plums on Market, both home-grown and foreign and of various sorts of English, the Old Muske, Violet, Diamond, Washington, &c., are in evidence, and of foreign the Prune is good and in fine condition; the only Pines on hand to-day are in the hands of a few dealers. A fresh consignment expected to-morrow. Plums and Apples seem to have a downward tendency, excepting a few choice samples; the few Filberts I have seen have not been sufficiently matured.

SEEDS.

LONDON: August 24.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended. In consequence of the long drought, the sowing demand for Trifolium, Mustard, Rape seed, &c., is naturally restricted, but a copious and sufficient downpour of rain would, without doubt, quickly bring about a brisk sale for these articles. Meantime, as regards values all round, there is no quotable variation. Samples of new English Rye and winter Tares are now coming to hand. Canary seed is very strong; the new crops will, it is said, prove short. Hemp seed keeps steady, whilst there is no alteration in either Peas or Haricots.

(Remainder of Markets carried forward to p. ix.)

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.					(More +) or less (—) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
	Above (+) or below (—) the Mean for the week ending August 20.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 2, 1898.	Below 42°, difference from Mean since January 2, 1898.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.				
0	2 +	104	0	+ 154	— 228	8 —	162	34.2	41	29
1	1 +	104	0	+ 91	— 222	4 —	124	15.3	24	32
2	2 +	127	0	+ 132	— 216	4 —	112	12.6	25	31
3	5 +	160	0	+ 69	— 207	3 —	102	12.5	56	34
4	5 +	156	0	+ 75	— 215	2 —	102	12.0	37	33
5	7 +	181	0	+ 129	— 243	4 —	93	11.4	63	36
6	3 +	125	0	+ 151	— 217	6 —	141	24.0	27	35
7	3 +	140	0	+ 158	— 244	6 —	118	20.4	30	36
8	5 +	159	0	+ 175	— 156	0 over	107	17.9	44	41
9	2 +	120	0	+ 138	— 168	5 —	150	21.5	37	31
10	2 +	134	0	+ 237	— 134	2 +	117	21.4	44	35
*	6 +	175	0	+ 307	— 93	4 —	122	14.1	67	47

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts: 1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts: 6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

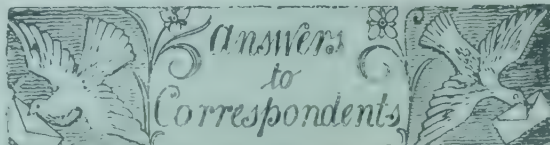
The following summary record of the weather throughout the British Islands for the week ending August 20, is furnished from the Meteorological Office:—

"The weather during this period was very warm and fine generally. Thunderstorms, however, occurred from time to time in different parts of the Kingdom, those experienced over southern Wales and the south-west of England on Thursday being of unusual severity and duration, and in some places were reported to have been accompanied by a slight earthquake.

"The temperature was above the mean, the excess ranging from 1° to 2° in 'Scotland and Ireland' to 5° in 'England, E., England, S.W.,' and the 'Midland Counties,' 6° in the 'Channel Islands,' and 7° in 'England, S.' The highest of the maxima were registered during the earlier days of the week, when they ranged from 87° in 'England, S.' (at London on Monday), and from 84° in 'England, E.' to between 76° and 74° in 'Scotland' and to 73° in 'Ireland, S.' The lowest of the minima, which occurred during the latter half of the period ranged from 37° in 'Scotland, E.' and 38° in 'Ireland, N.' to 54° in 'England, S.,' and to 57° in the 'Channel Islands.' Over the south and south-east of 'England' the nights were unusually warm.

"The rainfall was less than the mean in most districts, but just equalled it in 'England, S.W.,' and exceeded it in 'Ireland, S.' The fall accompanying the thunderstorms of Thursday appears to have been extremely heavy locally, but the greatest amounts at any of our stations were 1.43 inches, at Plymouth, 1.08 inches at Llandovery, and 1.05 inches at Prawle Point.

"The bright sunshine was in excess of the mean in most districts, particularly in the 'Channel Islands,' 'England, S.,' and 'Scotland, N.,' but there was a deficit over the northern parts of 'England,' and the greater part of 'Scotland.' The percentage of the possible duration ranged from 67 in the 'Channel Islands,' 66 in 'England, S.,' and 56 in 'England, E.,' to 27 in 'Scotland, W.,' 25 in 'England, N.E.,' and 24 in 'Scotland, E.'"



A CORRECTION: PEA THOMAS LAXTON.—In our report of the Pea-trials at Messrs. Hurst & Sons' grounds at Kelvedon, the writer, Mr. R. Dean, inadvertently named the new Pea, "Thomas Laxton," as being similar to Eckford's variety "Essential," when he really had some other than T. Laxton in his mind. See our issue for August 6, p. 100.

CARNATION MAGGOT.—The fly—*Hylenica nigrescens*—lays its egg on the leaf, and this, when hatched out as a maggot, eats its way between the leaf-surfaces, and down the shoot, into the stem; once there the plant is sorely crippled, and most likely will die. The maggot, a minute insignificant creature, must be diligently hunted for with a sharp-pointed needle and a knife; if found in the leaf well and good, an end is soon put to its travels, and if it has left the leaf and entered the shoot, down which a tunnel is made, the shoot should be cut off and the maggot killed, but if the maggot has reached the stem, this must be slit open and the enemy found and killed. It is possible, by the application of quassia-water, to make the leaves distasteful to the fly, or, as in the similar case of the Onion-fly and maggot, it could be kept away from the plants by strewing chaff, sawdust, &c., saturated with petroleum among the latter. Every means should be taken to preserve the wax-like white bloom on the "grass," this being the best protector against pests, insect or fungous; and in applying water to Carnations, the rose watering-can should not be used, but the water applied by means of the spout without wetting the "grass."

CUCUMBERS FAILING: Kingstown. The young fruits decay from some detail in the condition of cultivation being opposite to the requirements of the plants. We cannot speak decisively in the absence of an intimate acquaintance of those conditions, but would advise you to see if the root-drainage is perfect. The water should be able to get away very freely. Let the atmosphere of the house at some part of the day become comparatively dry. Be careful in the use of artificial manures.

CYPERUS AND FERNS DEAD: Bertie G. Jones. We fail to find fungus on either, nor are there any appearances indicating the ravages of weevils or their larvae, or other insects. The treatment afforded the plants last autumn was decidedly unnatural, and calculated to somewhat exhaust their vitality, but not to kill them.

DISQUALIFICATION OF FRUIT EXHIBIT: A. H. The schedule in the case referred to, states that in the collection of nine distinct varieties of fruits, not more than two of any "species or kind" be shown. We are disposed to think that the schedule was unhappily worded, because it was wished probably to prevent merely the exhibitor from showing more than two varieties of Grapes, of Currants, of Melons, or of Plums. Now, the Royal Horticultural Society has laid it down in its *Code of Rules*, that for exhibition purposes, "Peaches, Nectarines, Apples, and Plums," are distinct "kinds"—that is, they are perfectly distinct from each other; the Peach as distinct from the Nectarine as the Plum from the Apple. With this view of the question we quite agree. But in your schedule the compiler says that "not more than two of any species or kind" must be shown. Botanically, of course, the Nectarine is only a smooth-skinned variety of the Peach, and owing to the inclusion of the word *species*, we think the judges were justified in accepting it literally, and accordingly disqualifying the exhibit.

FRUIT DROPPING: J. Prince. This may be due to a variety of causes, viz., injury by spring frost either to the blossom or just after blooming, great dryness of the soil, a common cause with trees on walls; excessive productiveness, when it is an effort of nature to relieve the plant of part of its burden. We should suppose that your trees, like many others in all parts of the country this year, suffered from the inclement weather prevailing at the blossoming time. Those standard trees of Apples and Pears which you inform us are carrying good crops, have their roots probably in the moist subsoil, and the blooms may have been protected by the foliage in the case of late-flowering varieties. In the case of

cordons which have no fruits, the dropping may be due to dryness of the surface soil or to frost. All heavily cropped trees should receive a few copious applications of water and manure-water, previously pricking up the surface so as to let it sink in where it is chiefly wanted. We should strongly advise the copious watering of all wall-tree borders without exception, and keeping the surface crumbly, or mulching it.

GRAPES: Nat. The two bunches sent are suffering from shanking, for a cure of which see *Gardeners' Chronicle*, last issue, under Notices to Correspondents; and from the spot malady, caused by a fungus *Gloeosporium laticolor*, remedies for which have frequently been given in these pages in recent issues.

HYBRID BLACK CURRANT AND GOOSEBERRY: W. Culverwell. We are much obliged by your sending us a sample of this curious hybrid. The flavour of the fruit is a pronounced Black Currant one, and generally in foliage, &c., the plant is intermediate between the parents. The fruit would be excellent for tarts, &c. It has been figured in the *Gardeners' Chronicle*, p. 371, Sept. 3, 1892.

INSECT DESTRUCTIVE TO APPLE-TREE FOLIAGE: W. Castle. The common Vapour-Moth larvæ. The female is wingless, and should be sought out and destroyed. Syringing with petroleum emulsion or soft-soap in water and petroleum would do good; and the webs spun by the larvæ should be searched for in infested and in neighbouring trees, and burned with a lamp or taper.

INSECT OR VEGETATION?: Howden & Co. Totally decayed when it reached this office, and unrecognisable.

LACHENALIAS: T. T. The bulbs are overrun with the "Eucharis mite," *Rhizoglyphus Robini*. The soil where they have grown should be sterilized before bulbs are again planted in it. G. Massee.

MAGGOT IN MARGUERITE LEAVES: H. A. Nothing equals catching them with a needle, or affording them a sharp nip with the thumb nail. They are readily seen in the channels they make between the upper and lower surfaces. This practice, if followed up daily, and cutting off and burning the worst infested leaves, will greatly check the spread of the pest.

NAMES OF FRUIT: W. H. B. Apple Sheep's-nose, an old Devonshire variety.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—F. W., Lichfield. *Oncidium luridum*.—R. T., Epsom. *Odontoglossum Coradinei*.—C. A. B. 5, *Clematis coccinea*; 6, *Hypericum* species, send when in flower. The Conifers next week.—R. F. *Gentiana pneumonanthe*; rare.—W. T., Brighouse. 1, *Amaryllis Belladonna*; 2, *Jacobinia (Justicia) carnea*. The Crotons we are unable to name from the specimens sent.—J. Don. *Syringa Josikea*.—K. W. G. 1, *Epilobium angustifolium*; 3, *Eupatorium macrophyllum*; 4, *Juniperus virginiana*, Red Cedar.

POTATOS: D. M. Bean. Send them to Mr. A. Finlay, a large grower at Markinch, N.B., who would doubtless name them for you.

SPIDERS IN A PLANT HOUSE: J. S. Vaporise the house with Richard's X L All Compound. It will do not the least harm to the plants.

TWO-FACED DAHLIA: F. E. J. A specimen of the two-faced Dahlia, due to the union of two flowers, a species of fasciation. It is very common.

COMMUNICATIONS RECEIVED.—W. E. G.—M. T. M.—A. Hope (too late)—C. de B.—E. W.—A. H.—E. J. S. & Co.—W. Crump.—Ed. Conner.—Rev. Canon Parker.—C. A. F.—Wyckoff, Seamans & Benedict.—G. N.—W. Tie.—K. W. G.—J. R., Grantham.—J. W. C.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 3, 1898.

REMINISCENCES OF COVENT GARDEN MARKET.

IT is about fifty years ago since I first became acquainted with this market, then and now the largest in the metropolis. Since that date not only have great changes taken place in the market itself, but in its management, in the enormous increase of its trade, in the extension of the area devoted to selling and buying, and the customs of the salesmen of all sorts, many of whom then resided over their shops, which is not the case at the present day. That the amount of business done, and the number of growers frequenting Covent Garden Market was greatly less than it now is, will be apparent from the staff employed at that date.

There was a superintendent, Mr. Gardner; two collectors, named Stace and Charlwood; three beadies in livery by day who carried canes, and two by night; an engineer, who had charge of the engine for pumping water from a well beneath the shop at the corner of the middle cross-gangway, the shop being then tenanted by Mr. Bennett. The entrance to the engine-house was down an area in the long market, and the water was supplied to the market-tenants (many of whom, as I have said, lived on the premises over the shops), and to the fountain on the conservatory. Lastly there was Jemmy, the marketsweeper. These persons comprised the whole of the staff; the police did not then patrol the market. On the south side were three public-houses, viz., Way's, the Green Man, and the White Horse. There was a large arch next to the middle cross-gangway that used to be occupied by Potato merchants, and here was an entrance to the cellars beneath. Two shops now occupy this space. That section of Covent Garden now called the long market was then open to the sky—it is now covered by a fine glass and iron roof; and the "centre row" consisted entirely of retail shops, with the exception of two, the tenants of which did some wholesale trade. The Apple-market was covered, also the middle cross-gangway at that part; but the square market was nearly all open to the sky; now both are roofed over.

On the north side there existed a large arch, where the notice-boards, rules, regulations, and bye-laws of the market were placed, one on either side. The archway was occupied by sellers of Carrots and Peas; now two shops occupy the site of this arch, at the end of North Row. Near to the cross-gangway was an approach to the conservatory. At that period there were female porters called basket-women employed about the market, who used to carry things on their heads, on a small round pad—just a rim; and these women were furnished with a round metal badge with a number on it—not like those now in use. The baskets were oval, with four handles, one each side for the

hands, and one at each end on the top for lifting. One small shop in the square was occupied by C. Murrell, whose business was exclusively that of a vegetable-flower cutter; the imitation flowers being cut out of Carrots and Turnips, and mounted on a twig of green Box. I have also seen Beetroot similarly manipulated. These flowers could be had plain or coloured, according to desire. On the right-hand side of the gangway, looking towards James Street, Mr. Rubergall, a market-gardener cultivating land at Earl's Court, had a stall, and his waggon used to be backed in, and the goods sold from the tail of the waggon. Outside, in the front of his waggon, a man was allowed to stand who sold pies, his wares being carried in a large basket-affair with a cross handle, the basket being mounted on four legs; next to him stood Miles, a grower from Fulham, who brought his produce to market in a donkey-cart. William came at that time, and was succeeded by Ralph Miles, who came to the market for a great number of years. Next was Hawke, of "Champagne Rhubarb" fame. About that time came Jessop, a large grower from Grove Park, Chiswick. These men sold from the waggon, this being drawn in towards the pavement; as did all growers. Along the north side, at that time many small growers congregated, who came with a cartload of stuff only. Some of these would back in if the produce was loose; if in baskets it would be unloaded; and that was the custom right away round to the west end of South Row.

At the James Street corner of the Piazza was Willis' book-shop, and at the left-hand corner, now the Post Office, stood the "Britannia" public house, kept by Mr. Webber. James Street No. 28 was the market coffee-house, which was open day and night, the only time it was closed being on Sundays, from 11 A.M. till 4 P.M. Large quantities of Peas were then grown in Middlesex by farmers, notably, Sherborne, Vincent, Freeman, Merrick, and others; and the Peas came principally in corn-sacks, the greater part of them, hundreds of sacks daily, coming to the North side and the North-east corner. On Saturdays during the Pea season there would be a second market in the afternoon, commencing about 4 and lasting till sometimes 11 at night, the first arrival coming about 4 o'clock and continuing till, sometimes, between 8 and 9 P.M. Business used then to commence early, that is, from 3 A.M., and keep on till late at night. On Sunday morning a lively trade was carried on, by retailers chiefly, in the open space opposite St. Paul's Church until 9 A.M., when everything would be cleared away sharp, and the cellar-flaps locked down. The shops in the Centre Row being chiefly in the occupancy of retailers, and most of those in North Row doing retail business after the wholesale market was over, which was practically by 10 o'clock P.M., these used to keep open in the summer till 9 P.M., and on Saturday nights till 11 or 12 o'clock, and it was even later before everything was cleared away, which always had to be done on Saturday nights.

The Piazza was at that date continued round to Russell Street, and where the open market entrance is to the floral hall stood the Piazza Hotel, which was pulled down after the destruction by fire of Covent Garden Theatre, which occurred March 5, 1856. The Bedford Hotel occupied most of the upper portion of that part of the Piazza which extended from the Floral Hall to Russell Street. A beadle kept order under the Piazza. The nursery business was carried on under the little Piazza round towards the

front of the church, where, at election times the hustings were erected, and a lively time it often was, particularly was it so when Mr. Cochrane was the candidate. There were two coffee-stalls under the Piazza, one opposite to what is now the Tavistock Restaurant, then an entrance to the renowned Geo. Robins's auction rooms, the other opposite to Burnet's, now Lockhart's.

The church and graveyard have undergone great alterations since then, the portico being at that date enclosed with iron railings, which extended from the corner of King Street, then Bocking's basket shop, where a destructive fire occurred Feb. 25, 1868, at 2.30 A.M., at which Mr. Lobjoit, a market gardener, who lodged in the house, lost his life. The church was galleried and pewed, and the walls were cased with stone outside, now replaced with red brick. Here was an entrance to the churchyard, where now is a public lavatory; and by the side of steps leading into the church was a building in which the fire-engine was kept. This engine, when it turned out to attend fires, was at that time in charge of a beadle, whose name, I think, was Reed.

Quantities of fruit from the Feversham district then came by boat to the inn called the Fox-under-the-Hill, part of the way down an alley off the Strand, now flanked by the western side of the Hotel Cecil. There porters, called "Fox porters," used to carry the fruit, three bushels at a time on the knot, from the river up to the market, and hard work it was, it being all up hill. Each porter carried a cord to put across the top of the basket, which he held in each hand to prevent the basket shifting, and the porters generally wore leather hats. Early Potatoes came from Cornwall in oval baskets containing from $\frac{3}{4}$ to 1 cwt., securely packed with straw, and laced over with tarred string. Truffles from the Alresford district used to be sold by some of the shopkeepers, the usual price being 2s. 6d. per lb. Apples already prepared for table, called Tucker's Norfolk Beefings, were sold in the market. Tucker was a confectioner in Russell Court, who was noted for his dried Apples, which were precisely the shape of the Normandy Pippins sold by grocers to-day. [The same thing. Ed.] The bulk of the Oranges coming to Covent Garden were St. Michael's, and these were packed in the dried envelopes of the Maize culm, and heaped up high above the box, making a most unwieldy package. Of Lemons, Messinas were then the best. Of Grapes, the Almeiras, packed in cork-dust, and the Lisbon (purple) or black, as they were called, came packed in saw-dust in boxes.

Chief of foreign Apples, the French Royal and Bellfleurs, came in long wooden cases, such as eggs are packed in; and Court Pendu Plat in sugar-boxes. Most of the English supply came then by road, large quantities of Apples coming from Berkshire and Oxfordshire by road-waggons, notably by Payne from Oxford, Illsley from Maidenhead, Wickens from Knowle Hill, Wise of Cookham, and many others from different parts. The Apples from the two counties named came chiefly in upright deep baskets holding a reputed bushel. These were furnished with two handles at the top, and a cord was looped round so as to tie over the top, and they would be piled well up, and when packed and tied over they resembled a skittle-pin in shape. Then the maund, of double the capacity of the bushel, and the sack-maund, double the capacity of the maund, were in use, but all of these measures and baskets are now entirely out of use. The varieties of Apples included Ribston and Blenheim Orange Pippins,

Kentish Broadeyes, Buff Russets, Cat's-head, Nonpareils of two kinds, French Crabs, Hawthornden, Golden Knob, Queenings, and Stone Pippins, a peculiarity noticed in the last-named that I never saw in any other Apple, namely, they would have a smaller Apple growing out from the side, and near the bottom; and the same Apple would have two eyes, and were what may be described as twins. Of Pears, we had the Autumn Bergamot, Swan's-egg, Windsor, Crasannes, Easter Beurré, Beurré Rance, Marie Louise, Williams' Bon Chrétien, Chaumontelle, Bishop's Thumb, Gratioli, and several others. Many of the smaller Pears became of very little value in the market, and the trade in them has died out. *T. P.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

CEREUS PERUVIANUS MONSTROSUS.

Few Cactus growers are without this very grotesque looking plant, but it is very rare to see it in flower; indeed, Mr. Watson says that he has not seen it. A. P. de Candolle, however, in his *Revue de la famille des Cactées Paris*, 1829, t. 11, gives a figure of it which differs from that now illustrated in the smaller number of petals, their more elongated shape, and their serrulate edge. Our specimen (fig. 46) was kindly forwarded by Mr. Justus Corderay, of Didecot, who says his specimen is 5 feet in height, and has been in his possession for many years, but has never previously flowered. It is remarkable in producing its flowers in cymes, and the scales of the buds are purple, while the petals are pure white. The original *C. peruvianus* was figured so long ago as 1614, in *Tabernaemontanus Kreuterbuch*.

HYPOXIS LONGIFOLIA, Baker.

The species of this genus are scarcely so well known as their merits demand. Botanic gardens are entrusted with the function not only of illustrating "natural orders," but also of conserving plants of horticultural interest till the time when a capricious public learns to appreciate them. We have to thank Mr. Burbidge, of the Trinity College Botanic Garden, Dublin, for the opportunity of illustrating this pretty perennial (see fig. 47, p. 177). It is a native of Algoa Bay, and is generally considered to require greenhouse treatment. Mr. Burbidge, however, has grown it out-of-doors for the last three winters. How much it has prospered under the evolving care of Mr. Burbidge may be estimated by comparing our present figure with that in the *Botanical Magazine*, t. 6035. The flowers are yellow, and the narrow, flaccid, grass-like leaves are remarkable in the genus for their great length.

BOOK NOTICE.

THE PRUNING BOOK.*

THIS is another of the garden-craft series of books written by Professor Bailey, of Cornell University, New York. It deals comprehensively with the subject of pruning fruit-trees. The book is not without errors, and a large proportion of the matter is more applicable to fruit-growing in the United States, where climate and other conditions are certainly dissimilar to our own. Thus it is, we suppose, that some of the details do not agree with our own hard-earned experience.

In the main, this new-comer is a very fair attempt to teach by book what usually takes a person half a lifetime to thoroughly grasp from the oral instructions of a practised master of the art. It is calculated to illustrate the old saying that an ounce of practice is worth a pound of theory. We quite agree with the author in a chapter on the Philosophy of Pruning, when he says, "Its advantages are several and important.

* *The Pruning Book*. By L. H. Bailey. Published by Macmillan & Co., Ltd., London and New York.

There is abundant opportunity for improvement in methods, and every plant needs a particular treatment, and perhaps some species or varieties demand little if any thinning; but, as a whole, pruning is indispensable to successful horticulture."

Although the work is unusually free from technical terms, it is full of useful illustrations showing the actual operations in minute detail. It is, however, exceedingly difficult to make quite clear the many problems that beset the timid or the inexperienced pruner. Nevertheless, the book, in spite of some shortcomings, will be appreciably helpful to the observant and enthusiastic amateur fruit-grower, who will find in it the settlement of difficulties of constant occurrence.

The work may also be recommended to even hard-headed, practical, rule-of-thumb men, who will find in it an amount of sound information respecting the physiology of plant life which will teach them the why and wherefore of methods he already practises. The author has very exceptional knowledge of the subject upon which he writes. The remarks upon the life-history of trees, and upon circumstances that tend to the production of wood or fruit-buds, is very interesting. The author tells us that all the advice in respect to notching, bending, ringing, and the like is born of the amateur and garden culture of the Old World. Whether the authors were conscious of the fact or not, the older American pomological writings were direct offshoots of European "petite culture." Throughout the book it is manifest that the methods and tactics pursued by the enterprising fruit farmers in the States are far superior to the careless way in which most fruit farmers manage their trees in our country.

Fruit-growers should secure an early copy of this work, and sift out and apply such of the advice given as is applicable to their respective cases. *W. C.*

CONCERNING THE CABBAGE.

THE Cabbage is such a common vegetable, so well known, and so universally grown, that it appears to be a subject scarcely worthy of being written about, and yet the Londoner would be badly off without his spring and summer Cabbage. M. Henri de Vilmorin has termed it one of "the most precious vegetables we have, eaten young, in the right season, and well cooked;" and he justly complains of the quality of this precious vegetable as generally served up in hotels and restaurants, an experience common to most of us.

Persistent and rigid selection has done much in the way of producing early, quick-heating Cabbages, tender, and grateful to the palate. The present has been a rare season for Cabbage, for the mild winter left them unharmed, and the moist season quickened their growth. They were so abundant that in the south of England whole fields have been ploughed up because it did not pay to send the produce to market; and yet in London we have to put up with a good deal of this vegetable that is old and tough.

Two important requisites are necessary in a Cabbage, one is, that it shall turn in early; another is, that the plants will not readily "bolt" into seed. Bolting into seed instead of forming a heart is a tendency in the Cabbage which results from causes not easy to determine. He who would have a fine stock of a particular type of Cabbage has to set himself the task of endeavouring to conquer this species of perversity. The chief cause is probably to be found in want of care in seed-saving; and no far as could be observed in the case of a recently inspected trial of Cabbages in Messrs. Sutton & Son's trial-grounds at Reading, it has been largely accomplished. The samples were from autumn-sown seeds, that is, sown during the two last weeks in July, and the two first in August, represented the leading types in cultivation, and in some cases a number of stocks of each. Now, Cabbages vary according to the time of sowing, and it has been well said that if you wish to bring out the defects in a particular stock, sow in the autumn.

Bolting is avoided by rigid and persistent selection of the seed parents; and on looking over the many

rows of Cabbages it did seem as if it is possible by this means to have stocks of Cabbage actually bolt-proof.

The samples under review were sown about August 17 last year, though the best time to sow is from the 5th to the 10th.

For spring sowing, Sutton's Earliest is one of the best; it was seen to be uniform in shape, with plump full hearts, and but few outside leaves. Rapidity of development is one of the characteristics of this variety, for if sown early in the spring, it will come into use as early as some of the autumn-sown Cabbages. While it is recommended for sowing in the spring, it is found that when sown as late as the middle of September it does not bolt. Little Gem is a rather small and early Cabbage; and so rapid in development, that seeds sown in April will, in a favourable season, produce good Cabbages for cutting the last week in July and early in August. It is recommended for sowing in the spring, but the autumn-sown samples in this trial showed that it can be sown at the latter season with decided advantage. Main Crop is a variety which can be sown at both seasons; it is a very fine Cabbage for large gardens, and is recommended for sowing in the spring. Favourite is also a fine and striking variety, and like all the Reading selections quite dwarf in growth, with few outside leaves, and a full sized compact heart. It appears as if the modern selection of Cabbages was operating to considerably reduce anything like waste in the way of outside leaves. Seed can be sown at both seasons, but being best for late summer and autumn use, Favourite should be sown in the spring. Sutton's Imperial represents an early and uniform stock of the Imperial type, for many years one of the best of our garden Cabbages.

For autumn sowing Sutton's April is a very dwarf Cabbage, an excellent variety for gentlemen's gardens; the very few outside leaves are of a deep green, heavily veined with white. It can be planted thickly, and is ready to cut by the third week in April. Sutton's Flower-of-Spring is one of the most perfect types of the modern garden Cabbage. It is a different stock to their April; being larger in size, a little later, developing a fine handsome head, dwarf, short in the stalk; and whether for market or garden purposes very desirable. If a gardener had to grow but one Cabbage, it should be Flower-of-Spring.

There were many samples of Ellam's Cabbage, drawn from various sources; of Nonpareil, and others, in order to have a good opportunity for making comparisons. Ellam's was seen to vary in character from various sources; and the same could be said of the Nonpareil. Early Market, represented by a fine stock, is out-distanced by Flower-of-Spring. A true type of Myatt's Offenham is a good market Cabbage; and of a number of samples of this, nearly every one lacked uniformity of character. The Nonpareil types appear to be better adapted for spring than for autumn sowing. *R. D.*

WINE FERMENT EXPERIMENTS IN FRANCE.

EXPERIMENTS made by the wine growers of France during the last few years, and which are still the subject of earnest investigation, are attracting considerable attention. It was formerly believed that the quality of a wine produced in a given vineyard could only be changed by some injurious adulteration. It is now asserted by the highest authorities in viticulture in France that the quality of such wines can be improved without the introduction of any extraneous or injurious substance. It is held that the qualities of the products of the specially famous vineyards are attributable to the local ferment which acts upon the juice of the Grape to transform it into wine. It is also found that there are notable differences in the local ferments, or rather in the effects which they produce upon the must. Acting upon the knowledge of these facts, the United States Consul at Lyons says that ferments have been selected from the products of a given vineyard, and used in the products of other vineyards, with the most satisfactory results. It will

not make the most famous wine out of the juice of ordinary Grapes, but it will ameliorate the latter and import to it, in a certain degree, the bouquet and taste of the former. It is contended by some that the ferment from a Bordeaux, Burgundy, or Hermitage vintage, will convert the juice of common Grapes into those famous brands. Consul Covert adds, however, that while this opinion is generally rejected, none of the many whom he has questioned on the subject, except wholesale dealers, deny that the addition of the ferment brings the wines nearer to the excellence of the brand from

development by the introduction of another ferment. "The wine thus obtained," says the report, "will possess a bouquet and an aroma hitherto unknown to Algerian wines." This experiment, according to the *Moniteur Vinicole*, was made by a large Bordeaux wine grower. It is said that, in some cases, the ferment may be directly mixed with the must, but it is preferable to make a preliminary preparation as follows:—Two or three days before pressing the main crop, say 50 lbs. of Grapes are thoroughly washed in an abundance of cold water before being pressed. This is to free them from the dust and

ferment, and is ready for use 50 or 60 hours after the beginning of the preparation. It must be mixed with the vintage must, immediately after the latter has been pressed out. The barrel containing the yeast—that is the juice of the first 40 or 50 lbs. of Grapes—should be well stirred in order to avoid the loss of the yeast which settles. The yeast should be mixed with the must as uniformly as possible, and several methods are indicated. Some of the yeast is sprinkled on the vintage tubs, presses, barrels, &c., and generally about one-third of the yeast prepared is thus employed, the remaining



FIG. 46.—CEREUS PERUVIANUS MONSTROSUS (FROM MR. JUSTUS CORDERAY): SCALES PURPLE PETALS WHITE STAMENS YELLOW (SEE P. 174)

which it was taken. Reports come from Algeria that experiments made there a few weeks ago prove that this process, with some modifications, is capable of working great amelioration in very ordinary wines. The method employed is as follows:—The Grapes are first washed and freshened in cold water, and then crushed in a vat. The must is next introduced under a pressure of four atmospheres in a tubular boiler, where the Grapes remain a quarter of an hour in a high temperature. A current of cold water is then passed through the tubes, lowering the temperature. At this time the must contains no ferment capable of development, the treatment having transformed the whole into an absolutely neutral liquid, ready or

germs which may have gathered upon them. They are then pressed, and the juice is separated from the seeds, stems, &c., by means of a fine sieve. The must thus obtained is put into a thoroughly clean barrel, which should be free from all odour; a proper quantity of ferment is mixed with it, and the whole is allowed to stand until needed for use, say two or three days. M. Jacmin, in a recent number of the *Moniteur Vinicole*, gives the following as the proportions to be used:—One litre (1.76 imperial pint) of select ferment is to be used in the juice of from 40 to 50 lbs. of Grapes for every 1600 gallons of the vintage must. The yeast thus set, if properly made, ferments actively under the influence of the selected

two-thirds being used as follows:—About one-sixth is put on the bottom of the vat before the crushed Grapes are emptied into it; the rest of the yeast is mixed with successive layers as the vat is filled up. What remains is finally poured over the top of the must. An ordinary spraying apparatus affords an excellent means, but it must be either new or very carefully cleaned beforehand. It is well to take the spraying machine into the vineyard, and to prepare a tub of yeast diluted with some freshly pressed juice. A single workman with a spraying apparatus is sufficient for a gang of fifty Grape-gatherers. He sprays the yeast on the bottom and sides of the tubs and other means of transport as the Grapes are put

into them. All bunches are thus covered with an imperceptible coating of yeast of good quality, and by this means any difficulty arising from the crushing of the Grapes during transportation is avoided, because any fermentation which begins is of an excellent nature on account of the precautions taken. The preparation and use of the yeast is the same for white wine as for red, although many makers of white wine content themselves with pouring the selected ferments directly into the must after pressing. The preparation of the yeast is more important in a cold season than in a warm one. This question of the use of ferments is receiving the favourable consideration of many great wine growers in France, and chemists have applied scientific rules to the use of the ferments.

Journal of the Society of Arts.

NURSERY NOTES.

THE EXETER NURSERY COMPANY.

THAT great changes take place in regard to business arrangements, whether of private persons or of those in a corporate capacity, is perhaps exemplified in this Company in a manner more noticeable than in many that might be mentioned.

Originally made famous by Messrs. Lucombe, Pince & Co. for its splendid specimens of plants and the fruit culture carried on there; where, too, the proprietors were consulted in landscape work, and themselves carried out the formation of new, and the renovation of old gardens which to-day bear their impress, and are greatly admired; remembering all that has been done in private places, and having evidence of the same kind of work on the nursery-grounds at Exeter, it is a matter of regret that the old has had to give place to the new. But sentiment must now give place to utility, and though the same characteristics may be in evidence, the outcome nowadays is of a totally different character. In days gone by, it was the case that wealthy patrons gave good value for plants, and hoped to see them in their glass-houses year after year. Nowadays the case is altered completely; numerous plants, bright and showy; if of a fleeting character no objection is taken, but they must be in variety, attractive, easy of removal, and there must be an abundance of others to take the places of the spent ones. Ah! that's it, brightness and plenty, scarcely twice to look upon the same combination and arrangement, whether in the mansion or conservatory, and then satisfaction is expressed, and all goes well. That with this desire in private establishments, a corresponding addition to the glass-houses has followed, cannot always be asserted; and where this is the case, as also when no such houses exist, then the market-grower, or such firms as the one in question come in and fill a gap that could not otherwise be easily got over. The many now seek supplies of plants and flowers, and to these attention must be paid. This was borne on me very strongly when passing through this nursery in company with one of the proprietors and their manager. It happened that we first visited the Cucumber and Tomato-houses, and such housefuls of these fruits, which are so easily disposed of, did one good to see. The Tomatos literally are grown by thousands under glass, and the crop is an immense one. The variety is of the firm's special saving, and comparing it with a few other named sorts, grown for trial, its excellencies in regard to vigour and heavy-cropping qualities are at once apparent. One house planted on April 13 is now a veritable thicket on first appearance; but on entering and inspecting them, it was seen that each was taken up by a single stem some 5 to 6 feet high, most of them already having six to eight clusters of green fruit, and on many of these bunches ten fruit, just about the size and shape of tennis balls, were hanging, the first cluster being almost on the ground, and where grown in pots they were hanging close to the edge. It would, however, convey a false idea to speak of one house only; it was Cucumbers and Tomatos in separate houses time and time again, until I omitted to count; but the

enormous weight of the Tomato crop, which would seem to be very much like a cross between Sutton's A 1 and Duke of York, and the crop of Cucumbers, Telegraph being the variety mostly cultivated, was such that I have not seen for a long time. Young plants of Cucumbers were just planted in fresh houses, one of which is 120 feet long; whilst outside the Tomatos were planted in narrow borders close to the walls of the greenhouses, and here later crops were showing, the plants looking healthy and strong.

There being a great demand for cut flowers, it is not to be wondered at that Richardias are grown by thousands. Of *Cœlogyne cristata* a large number of healthy plants was seen; *Cypripedium insignis* by hundreds; *Crinum* and *Pancratium* in large quantities; large beds of Lily of the Valley constantly coming on, to follow the imported crowns in the winter. And then beside all this, the firm annually prepare and dispose of in the autumn of thousands of plants in 5-inch pots of such plants as *Lomaria gibba*, *Adiantum cuneatum*, *Bausei*, and *decorum*; *Solanums* and *Cyclamen*, of which I saw large batches in the different houses and frames; *Pteris Wimsetti*, *P. argyrea*, this latter being in constant request; *Adiantum Farleyense*, too, is a good saleable plant. Ivy-leaved, zonal, and show *Pelargoniums* were here in different houses, full of flower, and represented by thousands of plants; the same may be said of the Palms in small and larger plants, *Fuchsias*, *Grevilleas*, *Hydrangeas*, and *Coleus*. *Maréchal Niel* Roses, too, are grown for autumn disposal, and fine stems, 6 and 8 feet, were already formed, some were then outside; the majority, however, were still under glass. *Niphetos* is largely grown, and in many of the houses it is planted out. It proves itself to be one of the most useful for bouquets, wreaths, crosses, &c. A large number is also grown in pots, also *The Bride*, *Catherine Mermet*, *Gloire de Dijon*, the *Climbing Niphetos*, and others.

In the Croton-house were quantities of small plants, as well as half-specimens; these had little air given them, but plenty of sunlight. The colour of the variegation and vigour of the plants were very noticeable. *Stephanotis* trained on the roofs of houses were numerous, and the plants were densely covered with the white fragrant clusters. *Bouvardias* are also a special feature, and were looking in capital condition.

Passing out into the open again, for it was an intensely hot day, I observed large beds of Carnations, herbaceous plants, including separate quarters of the white double-flowered *Pyrethrum*, a useful variety; and on the standing-out ground, on coal-ashes, were quantities of *Acacias armata*, *Drummondii*, and hybrids, *Choisya ternata* and *stellata*, *Ericas hyemalis*, *Willmoreana* and *gracilis*, *Boronias* of species, *Aralia Sieboldi*, *Hydrangeas*, and then again *Roses*, *Richardias*, and *Genistas*. A large house had been used for *Camellias*, &c., but during the gale of March, 1897, the whole of the glass and woodwork was taken bodily off, now the strong walls alone remain. Here were *Camellias* that must be some thirty to forty years old, with stems 24 to 30 inches in circumference, which had stood the past winter, and were none the worse, though many of them this spring were considerably lessened in height. *Luculia gratissima* in this house appeared none the worse for its winter exposure; whether it will bloom as freely as usual this autumn remains to be proved. *Trachelospermum jasminoides variegata*, in an open border, has been in its present position some twenty-six years unscathed, now is fresh and healthy, and full of flower. *Melanthus major* close by had stood out unharmed. A large specimen of *Salisburia adiantifolia*, some 60 feet high, continually came under one's notice in walking about. The remaining choice Oaks, Beech, Conifers, &c., recalled past days; whilst a grand arrangement of rockeries, now in a condition that would hardly satisfy the original builder, could he see it, still gives some idea of the extent and beauty of this portion of the nursery in the past. Now, the many have to be catered for, and some thirty large houses, 100 and 120 feet long, give employment to a larger number of hands than ever before, and afford supplies to a host of patrons. W. S.

FORESTRY.

OUR WOODS AND FORESTS.

THE recent visit of the Royal Scottish Arboricultural Society to the Forest of Dean has aroused a certain amount of interest amongst foresters in the management of the Crown woodlands, which, we trust, will not be entirely ignored by the powers that be. To nine-tenths of the inhabitants of this country, the "woods and forests" probably exist by name only; and this class would perhaps be greatly surprised to learn that we have anything in the shape of the state forests which are scattered so freely throughout France and Germany. Yet in Hampshire, Gloucestershire, and Berkshire we possess at least three Royal forests which are equal in area to any ordinary State forest on the Continent, and which are ostensibly maintained by the Government for the growth of timber. Two of these, the New Forest and Windsor Forest, are almost household words, it is true, but they are rather associated with the past than the present, and very few indeed concern themselves in the slightest degree as to why they are maintained or how they are managed. Of those who do, however, probably the majority regard them as huge natural parks, and imagine that the trees they contain are identical with those which existed in the days of William Rufus and Herne the Hunter, and rejoice in the belief that in them we still possess relics of the primeval forests which existed in the days of the Roman invasion. A study of their history, however, reveals the fact that all our Crown forests owe their existence as such to the planting enterprise of probably not more than two or three centuries back, and that the majority of the so-called natural woodlands of the country have as artificial an origin as those of the last fifty years, although the ground they stand upon may never have been cultivated or reclaimed. Those who oppose anything of the nature of enclosure, therefore, are really doing their best to destroy all chance of that woodland scenery being perpetuated, the preservation of which they claim to have so much at heart. For a very slight knowledge of tree-growth makes it obvious that natural regeneration of a wood is impossible when the seedlings are eaten down as they appear, by cattle, sheep, donkeys, and ponies; and that so long as this continues, no young crop can exist to take the place of the old trees when they disappear. Yet this is the state of affairs in many of the most picturesque spots of the New Forest, thanks to an Act of Parliament passed in 1877, whereby only those woods planted subsequent to the year 1700 are allowed to be or to remain enclosed. This is the more regrettable owing to the fact that this Act was passed largely owing to erroneous ideas on the subject at issue. The Deer Removal Act, which preceded it, allowed a maximum acreage of 22,000 acres to be enclosed, or protected from cattle at any one time, and any further enclosure had to be accompanied by an equivalent opening up of hitherto enclosed wood. This would have enabled the whole of the forest to have been planted up in rotation, and this probably led many to suppose that the most picturesque parts of the forest would be destroyed to make room for young plantations, and the public denied the right of enjoying them. This certainly ought not to have been, and probably was not the intention of the authorities, and the only difference made by enclosure would, or should, have been the exclusion of those animals which not only destroy young trees, upon which the perpetuation of the forest depends, but which deprive natural woodland scenery of one of its most attractive features. For truly picturesque woodlands do not entirely consist of ancient trees crumbling to decay. The sapling has its part to play as much as the veteran, and the one is quite as indispensable a feature of a typical forest as the other, providing they are associated as Nature always associates her subjects. There must be no hard-and-fast division of territory occupied by the old growth and the new, and no too distinct difference in the age of the trees which compose the younger crop.

The charm of natural forest scenery lies chiefly in the contrasts it presents. The slender sapling springing up beneath the shade of the hoary and decaying trunk, the stunted and deformed stem jutting out from the base of a tall, well-shaped bole, small clumps of young clean timber scattered here and there amongst flat-crowned and mature trees, these are the pictures which Nature provides us with if left to her own devices, and which combine the old growth and

be born, live, and die beneath their shade without noticing any great change in them. But in very old woods, one cannot live amongst them long without noting the gaps which each winter leaves in their ranks, and unless a succession has been well maintained, the character of the wood must ultimately alter for the worse. Londoners will, before very long, have an example of this in their miniature forest of Burnham Beeches. The next half century will see

BICTON.

(Continued from p. 154.)

THE view from the Temple across the flower-garden and slopes to the lake below, and its surroundings, is very charming, and beauty meets one everywhere (figs. 49, 50). Here is a plant of *Arun- dinaria nigra*, 15 feet high, and 20 feet in circumfer- ence, and several such clumps were noticed in that part; *A. japonica* (Métaké), a clump 15 feet high and 60 feet round; and a grand plant of *Magnolia stel- lata*, which blooms in great beauty every spring. *Rhododendron Falconeri* grows with vigour, but up to the present time it has not flowered; a fine speci- men of *Berberis buxifolia* is 30 feet in circum- ference; fine trees of *Magnolia purpurea*, and of *M. grandiflora*; in fact, these *Magnolias* are met with in almost every imaginable spot in the grounds. Hereabouts is a large bed filled with *Lobelia Queen Victoria* and *Hyacinthus candicans*, which have been out all the winter, and they are now strong in growth, and beautifully in flower. A fine clump of *Arun- dinaria falcata*, had been for years a close-growing plant; this spring, however, thirty new shoots have shot up, the rhizomes having run underground, in some cases a distance of 6 feet, before coming through the turf, and some of these shoots have grown to a height of 10 feet, and although the ground is dry and hard, they look as tender as a stem of *Aspa- ragus*. A plant of *Erythrina crista-galli* has stood out for years, and is now showing sixty flower-spikes. Adjoining this is a very large *Macartney Rose*, full of flower-buds, and in August its single white flowers make a glorious display.

We now enter a Fern-house in which *Adiantums* are largely represented, and arranged with these were many white-flowering *Begonias* of the manicata type, *Achimenes*, *Gloxinias*, *Crinums*, and *Streptocarpus*, with just a few *Cypripediums*.

The Temple, facing the flower-garden, is full of rare flowering shrubs, among which I noticed *Canonia capensis*, bearing creamy-white flowers, large speci- mens of *Magnolia fuscata*, *Pieris formosa*, having spikes of flowers resembling a Lily of the Valley; *Metrosideros lanceolatus*, one of the "Bottle- brushes;" *Acacia dealbata*, *Cerasus spinosa*, with clusters of small white flowers; *Pittosporum coria- ceum*, *Eugenia australis*, bearing Myrtle-like flowers, followed by scarlet berries; beside *Eucalyptus* and *Camellias* of different species and varieties. *Hippeas- trums* are grown in large numbers, and flowers may be obtained in almost any week of the year.

The flower-garden is wide and expansive, and the beds are filled with the usual class of bedding plants, but a number of *Cannas*, *Humra elegans*, *Lobelia Queen Victoria*, *Plumbago capensis*, and the old *Cal- ceolaria amplexicaulis* are used freely among the other plants, and thereby much of the flatness of ordinary bedding is taken away. Only two circular beds are filled with *Alternantheras*, *Sedums*, *Echeverias*, *Mesembryanthemums*, &c., and these are very pretty contrasts to the other beds. The fountains here are always playing. In a bed close by I observed *Spiraea alpina*, with pure white flowers; *Desmodium pendu- liflorum*, covered with purple pea-shaped blossoms; *Cytisus capitatus*, with bright yellow clusters; and *Malva moschata alba* and the white *Everlasting Pea*, the flowers of which are much in request for cutting purposes.

A *Cedrus Deodara* in the garden measures 11 feet 6 inches in circumference of the bole; whilst a *Silver Poplar* close by, at 3 feet from the surface, has a girth no less than 19 feet 6 inches.

THE ARBORETUM.

And now, with tape in hand, we make our way to the arboretum, which contains a most comprehensive collection of Conifers, evergreen and deciduous trees, and shrubs, which, unless one has seen it, no idea can be formed of the extent of the area planted, and the completeness of the collection. The length of this school of forestry is just 1½ miles, irregular as regards its breadth, but in some parts widening out to several hundreds of yards; the ground is beau- tifully undulated, and a large lake skirts the arboretum for a good portion of the distance.



FIG. 47.—HYOPSIS LONGIFOLIA: FLOWERS YELLOW. (SEE P. 174.)

the new without spoiling the characteristic beauty of either. If, therefore, enclosure means nothing more than enabling Nature to work out her own designs, her most ardent admirer cannot reasonably object to it, and it could only have been want of knowledge and experience which induced those who had no sordid interests to serve to assist in an agitation which led to the passing of so disastrous an Act as that of 1877. Perhaps some excuse may be found for the course they adopted in the fact that trees such as Oak and Beech die very slowly; a man may

the loss of many of those fantastic trunks which render this wood so famous, and nothing but comparatively young trees will be left to take their places. Very few look so far ahead as fifty years, it is true, with any great deal of anxiety, but the custodians of public property have a duty to per- form to future generations as well as to the present one, and we can only repay the debt we owe our ancestors by doing our duty to those who succeed us. A. C. Forbes.

(To be continued.)

The turf is in excellent keeping, being regularly mown and swept. Every tree is numbered, and a reference-book is kept, so that no difficulty is experienced in obtaining the name of a specimen. The first to come under notice were the Conifers, and grand specimens these are. I noted trees of *Cryptomeria japonica* and *C. Lobbi* 50 feet high, and in form perfect; *Cupressus macrocarpa* with a stem 26 inches in circumference; *C. Lambertiana*, very fine; *Sequoia sempervirens*, with a bole measuring 16 feet in girth; a remarkable *Taujopsis dolabrata*, 20 feet high, the branches covering a circle of 20 feet in diameter; a *Thuya occidentalis*, 40 feet high; *T. plicata* or *T. Lobbi*, of this were several specimens 60 feet high; a dense piece of *Retinospora squarrosa*, 25 feet high; *Thuya Vervaeiana*, also very fine; a capital plant of *R. squarrosa* var. *aurea*, 20 feet high. Close by this is a specimen of *Thuya dolabrata variegata*, and one of *Retinospora obtusa*, a fine densely clothed tree 40 feet high; *Abies Nordmanniana*, 50 feet, a grand tree; so too were *A. grandis*, of similar height, and *A. canadensis*. *Abies nobilis* was good, whilst a tree of *A. Douglasii taxifolia* reached an altitude of 70 feet. A *Pinus insignis*, said to be the finest in Devon, is 70 feet high; *P. Russeliana*, one of the rarest of the Pines; *P. Hartwegi*, rather tender, and *P. australis*, one of the finest in England, is 35 feet high; and *P. pinea* is very fine. *Sciadopytis verticillata*, and *Podocarpus coriarius* are well represented.

Many smaller specimens of other choice species are present, and mention should be made of the Golden Yews, which act as grand foils to what might otherwise be the sombre green of these giants. Still passing, we come to *Phyllocladus asplenifolius*, whose pinna-like foliage reminds one very much of *Asplenium furcatum*. *Pinus Pinaster* var. *Escarana*, and *P. patula* are well-grown specimens of very rare species; *Garrya elliptica*, then immense fruiting-trees of *Filberts*, one of which measured at 3 feet from the ground no less than 7 feet in circumference, and at this height it had divided out into twelve strong limbs. Varieties of *Planes*, *Beeches*, and *Sweet Chestnuts* now come into view, some of the *Beeches* being singularly beautiful, especially *Fagus antartica*, an evergreen species. Some species of *Quercus* were recently planted, and among the established ones *Quercus ruber pectinata*, which has as finely-cut leaves as some of the Japanese Maples; *Q. tinctoria*, with leaves 12 inches long; *Q. cerris* var. *Lonetti*, very fine, with branches down to the grass; *Q. glabra latifolia*, almost like a *Magnolia*; *Q. cerris variegata*, very distinct, a grand tree. Then follow some seventeen species and varieties of *Walnuts*, among which *Juglans amara* and *J. nigra* were very conspicuous; *Celtis Tournefortii* is likewise a distinct-looking tree.

Many and large were the trees of *Birch* and *Alder*, and in a portion of the grounds, where a small stream of water runs, *Poplars* and *Willows* were largely planted. Some forty varieties of *Ash*, many being large trees, were followed by a collection of *Sweet Bays* and *Boxes*. Here also was a large *Buddleia globosa*, with its yellow flower-balls just going over; and then large bushes of *Azaleas* and *Rhododendrons* in great variety. *Fabiana imbricata* is a large bush, with dense corymbs of white, Heath-like flowers. Honey-suckles of species and varieties come next: *Lonicera involucrata* is now covered with its bright scarlet and orange flowers; *Kalmias*, *Hydrangeas*, *Arbutus* then follow; and after these *Escallonia*, *Myrtles*, *Deutzias*, and beds of *Spiraeas* in variety—one of *S. coronata* is beautiful indeed, the plants bearing sprays of creamy-white flowers 2 feet in length; *S. callosa pumila alba*, *S. c. rosea*, and many others, as *Tamarisk*, *Mock Orange* (*Philadelphus*), single and double-flowered *Prunus Cerasus*, *Crataegus*, *Rhus Cotinus*; and here we met with a beautiful object, *Ceanothus azureus*, covered with its pale blue, branching clusters of flowers. Then came *Hollies* in much variety, *Euonymus*, *Limes*, and a fine plant of *Stuartia virginica*, covered with white flowers measuring 3 inches across, and having deep purple-tinted stamens. In a sheltered spot were large shrubs of *Thea Bohea* and *T. viridis*. W. Swan, Exmouth.

(To be continued.)

COLONIAL NOTES.

THE Supplementary Estimate on behalf of the West India Islands, which was prepared by the Colonial Office for submission to the House of Commons, was for a total of £41,500, and included among other items, £10,000 as a grant in aid of the central sugar factories, to enable the Government to assist in the formation and working of such factories in a manner to be hereafter determined upon; £5000 for the purpose of enabling Crown Agents for the Colonies, under the direction of the Secretary of State, to enter into contracts for improving steam-communication between the various West Indian Colonies and other countries, including arrangements for the carriage of fruit and other produce; £4500 as a grant in aid of botanic gardens and agricultural instruction and experiments, also in accordance with the recommendations of the West India Commission, to be used for the purpose of establishing a department of practical instruction in agriculture and botany in the West Indies; for maintaining botanic stations in the islands above-mentioned, together with Tobago and Grenada; £1066 for incidental expenses of the Agricultural Department, this including travelling, the purchase of furniture, books, implements, prizes to local horticultural shows, &c.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorset.

Seasonable Treatment of Orchids.—With the advance of the year the treatment afforded the plants will require modification, so as to enable growth to mature thoroughly, and thus allow the plants to pass the winter safely. Novices in Orchid cultivation should bear in mind that it is mistaken practice to be continually damping down, as by so doing an unnecessary degree of humidity is maintained, which is not desirable, in view of the shortening days. From the present date till such time as fire-heat must be more constantly and freely employed, a moderate damping in the morning and afternoon will suffice for all species of Orchids; damping down a little earlier in the afternoon and later in the morning as the days shorten, and in accordance with the inside temperature. For several hours during the middle of the day the air of the house should be allowed to become comparatively dry; and with the reduction of humidity in the houses a gradual increase of ventilation should go on, more or less according to the state of the weather. Great care must be used that the plants in the warmer houses are not chilled. By closing the ventilators of the East India house at about 2.30 P.M. the temperature may be allowed to rise to 80° or 90° by sun-heat, and towards evening the fires should be started gently to prevent the thermometer falling below 70° in the early morning hours. On warm nights the bottom ventilators of the *Cattleya*, *Mexican*, and intermediate-houses may be left wide open, but it is advisable to close the top ones early, and at the same time to have the hot-water pipes slightly warmed. In cool-houses, which need no fire-heat at the present date, ventilation may be afforded as external condition will allow; and it will also be necessary to gradually expose the collection, as a whole, to more sunlight. In reducing the amount of shading, discrimination must be used, especially where a varied collection is grown, some species being liable to lasting injury if exposed to strong sunlight, and amongst those that are thus readily affected are *Phalenopsis*, *Angraecums*, *Phaius*, evergreen *Calanthes*, *Erias*, *Bulbophyllums*, *Cirrhopetalums*, the *Cologynes* and *Cypripediums* generally of the warm-house; *Vandas*, *Boleas*, *Pescatoreas*, *Oncidium*, *Eulophiellias*, *Cymbidiums*, *Lycastes*, and many of the cooler growing *Oncidium*, *Masdevallias*, and *Odontoglossums*.

Masdevallias.—If any of the *Masdevallias* are out of health the present is a good time to examine and repot them. The plants should be turned out of their pots, dead roots and rhizomes cut away, and then be placed in pots just large enough to hold their roots conveniently. Overgrown masses of *M. Harryana*, *M. Lindenii*, *M. Veitchiana*, *M. ignea*, *M. coriacea*, *M. coccinea*, *M. Peristeria*, *M. Chelsoni*, *M. corniculata*, *M. amabilis*, *M. Reichenbachiana*, *M. Barkeana*, *M. macrura*, &c., which are becoming bare in the middle

may be divided, and the pieces potted up separately or remade into more convenient-sized specimens. *Masdevallias* being plants of vigorous growth, require largish pots. These should be about half filled with clean crocks placed in an upright position, and over these lay sphagnum-moss, and over this a compost consisting of peat and sphagnum-moss in equal proportions, with some small crocks mixed with these ingredients. Keep the base of the plants on a level with the rim of the pot, and insinuate the compost among the roots, and occasionally a few thick crocks likewise, potting moderately firmly. The critical time with *Masdevallias* is immediately after repotting, and before the roots have seized upon the compost, any excess of water at that time resulting in the loss of leaves and roots. For a few weeks water should be afforded very sparingly, and the air of the house kept fairly moist. When re-establishment has taken place, the quantity of water at the root may be gradually increased, and the humidity of the air slightly reduced. All the varieties mentioned grow well in pots standing upon a stage. The following species and hybrids do well in pots if placed near the light, viz., *M. Armini*, *M. caudata*, *M. Shuttleworthii*, *M. Ajax*, *M. racemosa Crossii*, *M. elephanticeps*, *M. Gargantua*, *M. Schlimi*, *M. tovarensis*, *M. Davisii*, *M. Courtauldiana*, *M. Gairiana*, *M. splendida*, *M. cucullata*, *M. melanonantha Trochilus*, *M. glaphyrantha*, *M. Asmodea*, *M. Shuttriana Rebecca*, and *M. Pourbaixi*. The dwarf species, as *M. ionocharis*, *M. Wagneriana*, *M. muscosa*, *M. Estradae*, *M. triadactylites*, *M. picturata*, *M. O'Brieniana*, *M. Stella*, *M. infracta*, *M. rosea*, *M. Gelengiana*, *M. simula*, &c., may be grown in small shallow pans hung up close to the roof-glass; but if the atmosphere of the house be naturally dry, a light position upon the stage would suit them better.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

Large Onion Bulbs.—The bulbs are now fast approaching ripeness, and a fine dry day may be selected upon which to lift them; removing them afterwards to some suitable place where they can be thoroughly dried. Ainery where the Vines are at rest, or a Peach-house, may be suggested as a convenient place for this purpose. Those who have no convenience for drying the bulbs under cover may spread them out on a hard path, on sheep-hurdles, or the bare smooth ground of the bed, and turn them over a few times. They will need to be stored away subsequently in a dry, cool shed. Those who do not wish to incur the trouble attending the raising of Onion plants from seed early in January would do well to sow their favourite varieties at this season in the open border. This year we have had extra fine specimen bulbs that have been produced from autumn-sown seeds of such sorts as *Ailsa Craig*, *Cranston's Excelsior*, *Golden Rocca*, and *Sutton's Exhibition*.

The Leek.—This crop may be very considerably benefited by affording it a dressing of guano and soot, or some other approved fertiliser. An excellent manure for Leeks, if given in a sufficiently diluted state, is the drainage from the cattle-stalls. Plants that are being cultivated for show specimens should be afforded water as often as it may be required. If the bed, or trenches, be full of roots, a slight dressing of manure may be afforded the soil once a week in order to keep the plants growing freely. At the same time care must be used not to over-feed the plants, or they will become useless.

Late Peas.—Much attention is given to the production of the earliest dishes possible of this delicate vegetable, and as good late Peas are almost equally appreciable, the same care should be given them also. Usually, late Peas require liberal and frequent supplies of water at the roots. Mildew seldom attacks healthy, strongly-grown Peas, but may be trusted to render utterly worthless any rows of starved, stunted plants that have been neglected.

Out-of-door Tomatos.—Gather the fruits now as soon as they have commenced to colour, and place them in a warm, dry position to fully ripen them before they are sent for use into the kitchen. Expose the unripe fruits to the sun as much as possible by pinching off all surplus growths from the plants; and if the plants have not yet been stopped, this should be done at once. In some localities the plants may need water at the root.

Potatos.—Any variety of Potato that is sufficiently ripe should be lifted. Traces of disease may be

observed, but no bad cases have yet come under my notice this season, although I grow about thirty varieties here; however, the sooner they are raised after the tops show signs of ripening the better.

Mushrooms.—Continue to collect manure for the making of new beds, and turn it frequently. An endeavour should be made to get as many beds made before the cold weather sets in as will furnish sufficient Mushrooms for a considerable portion the whole of the winter.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Peaches.—Those trees of early varieties from which the crop of fruit has been gathered should have the whole of the fruiting shoots removed where they are not wanted for extending the tree or filling blank spaces, most of such shoots being useless, and if allowed to remain they would have to be cut out at the winter pruning. Hence it is better to remove them, and allow the new shoots that will bear fruit in 1899 to increase in size and vigour, with the certainty, then, of their blooming strongly. Shoots that are thoroughly matured by exposure to sunshine suffer little or not at all in severe winters, when greener and consequently tenderer shoots often get killed back some distance. After the thinning is finished, the trees should be syringed with Tobacco-water or an infusion of quassia, to free them from aphides, not omitting to put soft-soap at the rate of 4 oz. to 1 gallon of rain-water to the above, and not afterwards rinsing off the insecticide. If red spider and mildew infest the foliage, use Gishurst's soap. Brown scale, a very troublesome insect on Peach-trees, disfiguring the fruit with a sooty-black deposit, and sucking the juices of the tree, may be removed from the skin of the fruits by brushing very lightly with a soft brush if the fruits are firm; but which must not be attempted after the skin gets tender. The scale insect itself should be sought for after the fruit is gathered, insecticides being of no avail against it unless it is first moved from its position on the shoot; the trees may then be well syringed with the insecticides named, but much perseverance is necessary before brown scale is entirely eradicated.

Fruit that is ripening must be examined daily to prevent its falling from the trees, for I think it is a mistake to allow it to ripen so thoroughly as to drop into nets placed to catch such, the greater part of the flavour having departed by that time. It is better practice to test the ripest looking fruits, and if a fruit is found on slightly pressing it near the stalk to yield in the least degree, it should be gently raised and detached from the shoot. The apex of a fruit should lie in the middle of the palm, and the pulling or raising be done with the finger-tips. Fruit may be kept for a day or two to finish in a shady, dry room, or if required for market purposes, or for travelling long distances it may be sent off before the softness of thorough ripeness sets in.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Chrysanthemums.—Plants of the earlier flowering varieties should be removed into a cool, airy house directly the flower-buds show signs of opening; the expanding blooms will thus be secured from damage that would arise from frequent rains or strong winds. Later flowering varieties, however, are best left out-of-doors as long as the weather will permit. In various localities the date will vary considerably, but if preparations be made to house the plants when occasion requires, it will be possible to leave them in their present quarters until frost appears certain. Any plants upon which the flower-buds have not yet been "taken," or rather selected, will need attention at once. All side-shoots must be removed, and leading shoots secured to sticks. When the buds have been "taken," the plants will require less manure. If mildew be observed an application or two of sulphide of potassium may be given, at the rate of 1 oz. to three gallons of water, thoroughly syringing both upper and lower surfaces of the leaves. In view of possible wet weather, care should be taken that the soil does not become water-logged.

Herbaceous Calceolarias.—The earliest plants, now in 3-inch pots, may be transferred to others of 5 inches diameter, and those still in boxes had better be put into 4-inch pots. Make use of a compost consisting of two parts good fibrous loam, one part leaf-mould, and one-seventh of the whole of decayed

manure. A good portion of coarse silver sand should be added to this. Place the plants in a cool, airy frame, and shade from the sun. Until the roots become active be careful that too much water be not afforded. Smaller plants that have been pricked into pans may be transferred to boxes, putting them 3 inches apart. Afterwards place the pots and boxes on a cool and moist base.

Solanums.—Plants which are well berried may now be lifted and potted-up, and if this be done with care they will not suffer any check. The balls may be slightly reduced in size to suit the pots, but endeavour to preserve the roots from injury as much as possible. Should the soil in which the plants stand be dry, apply water copiously the day previous to lifting. When the plants have been potted stand them in a shady position for some days until root action has commenced, when they may be removed to a cool frame. Plants upon which flowers are now setting may be left in the ground some weeks longer.

Marguerites.—Re-pot those plants that having been cut back are now breaking freely into growth; removing a portion of the old soil, and re-potting into a pot one size larger than those from which the plants are taken; and shade and syringe the plants for a few days afterwards, to encourage root activity. Cuttings may be inserted in pots or pans, placing them in an intermediate temperature until they have rooted, when a light, airy position may be assigned them. Plants for autumn flowering may have frequent applications of manure-water.

Achamenes.—The earlier batch of plants will soon be past their best, and they may then be put on a shelf in a light position, where, as the foliage dies off, they will require but little water. Finally, the pots may be stacked on their sides in a cool position.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of Salisbury, Hatfield House, Herts.

Grape Vines.—The latest Grapes having begun to assume their proper colour, it will be prudent to examine the border, with the object of ascertaining its condition as regards moisture, as at this period a Vine makes large demands upon the roots. If the soil be found dryish, a heavy application of water may be afforded, and afterwards one of manure-water mixed with clear water. How often a border may be afforded water will depend upon its porosity, its width and depth, narrow and shallow borders and porous soils requiring water oftener than wide and deep ones, and stiff loams. As the Grape-vine contains much lime in its composition, this substance, either as superphosphate or quicklime, may be sprinkled on the border before applying water, that is, suppose the soil to be deficient in lime. The quantity applied need not exceed $\frac{1}{4}$ lb. of the former or 1 lb. of the latter per square yard. As the Grapes ripen, reduce the humidity of the air of theinery, and when quite ripe, damp the paths occasionally only on fine mornings. Let warmth be maintained in the heating apparatus, in order to keep the temperature at night at about 65°, and by day at 70°, or with sun-heat to 80° or 85°. Afford air early in the day, and increase the quantity, weather permitting, till noon, when a reduction should begin. A slight amount may remain on throughout the night in fine weather. Denude the Vines with ripening fruit on them of lateral shoots, excepting those of Madresfield Court; of this variety, only a few of the strongest may be removed. Let ripening Grapes be looked over, removing superfluous and shawked berries. Ripe Grapes which must hang on the Vines in good condition for as long a period of time as possible, must be afforded free ventilation on dry days, closing the top ventilators during rain, and the front ones when there is fog or much humidity in the air. In damp weather use the heating apparatus. If the soil at the roots is approaching dryness, afford water plentifully once. If there is a strawy mulch on the border, remove it before applying water, and replace it directly afterwards. Do not omit to examine the bunches for decayed berries at short intervals. Wasps must be kept out of all vineries where ripe Grapes are hanging, otherwise the loss of fruit will be serious. Hexagon netting is the best kind of material to use as an excluder. The foliage of early Vines should be kept in a healthy state, applying water at the root if the border is dry, and syringing it on fine days, using considerable force, but not so much as to tear the leaves. Keep theinery cool.

Early Pot Vines.—The pruning of Vines that will carry the earliest crop next year will depend upon

the date at which they will be started, and the least amount of time that should elapse between pruning and starting is six weeks. The canes of pot-Vines need not be left of greater length than 5, 6, or 7 feet, and all side-shoots should be cut back to within half an inch of their base. The dressing of these Vines with the usual mixture should not be done before forcing begins.

Early Permanent Vines.—The side-shoots may now be cut back to the lowest most prominent bud, and where two shoots come from one spur, and one is sufficient, the foremost shoot may be removed, as by retaining the other shoot the spur is kept short. The canes themselves may be shortened to within 1 yard of their proper length.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

Propagation of Bedding Plants.—It is now quite time that a commencement be made to propagate a stock of bedding-plants for next season. Cuttings should first be taken of the more tender species, such as Alternantheras, Mesembryanthemums, Iresines, Heliotropes and Coleus. Place the cuttings of these plants around the sides of $\frac{1}{2}$ -inch pots, which have been previously filled with leaf-soil and sand. The pots had afterwards be best plunged in the propagating-pit until the cuttings have made roots, when they may be placed on shelves near the glass in a house or pit where the temperature does not fall below 55°. Avoid over-watering, or the cuttings will be liable to damp-off. Cuttings of Pentstemon, Pansies, Violas, and other hardier plants need very different treatment, and may be dibbled into prepared sandy-soil, in cold frames or under hand lights placed at the foot of a north wall. Such plants as Lobelias, Verbenas, and Petunias may be had so comparatively true from seed that I do not consider it advisable to propagate them from cuttings, but to sow seeds in the spring. Continue to take cuttings of all varieties of bedding Pelargoniums and Fuchsias where these are used for bedding purposes.

General Remarks.—Seeds should be sown during September of any hardy annuals required to bloom early next summer. Pay strict attention to plants which will be required to fill up the beds in the autumn. They will probably need liberal and frequent root waterings to keep them in a growing and healthy condition. Roses and most other plants are suffering greatly from the drought, and need to be watered. The layering of Carnations, if not already done, should be completed as soon as possible, and any new varieties of Carnations it is proposed to purchase should be ordered as soon as convenient. During the present month all hedges should be given their last clipping for the season.

VARIORUM.

CETRARIA ISLANDICA.—This is one of the best materials for planting in shady courtyards where no direct sunlight penetrates. Under trees and similar places, this plant, the so-called Iceland Moss, affords good results when properly used. It has a good effect when in contrast with turf and gravel.

CHACUN A SON GOÛT.—It has been stated of the commander of an early Polar expedition that he tested the capacity of an Esquimaux for a fatty diet to the extent of a gross of what are termed "purser's dips," or short candles. The red Indian with untutored taste, is not to be outdone by his northern relative—this on the authority of Mr. F. Funston, a collector for the Washington (U.S.) Herbarium, whilst engaged in getting out specimens in the neighbourhood of Yakutat Bay, Alaska. Mr. Funston came upon large tracts of Cranberry, Blueberry, Black Currant (not eaten), and the Strawberry. Of this latter he writes:—"The vegetation of these sandunes includes many acres of Strawberry (*Fragaria chiloensis*). . . . This plant is found in immense quantities. . . . The fruit is about half an inch long, somewhat Pear-shaped, and of a light pink colour. The berries have an excellent flavour, and are eaten in large quantities by the natives who first cover them with seal oil, as they do all fruit." After all, there is no accounting for taste.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPT. 6. Royal Horticultural Society's Committees.
National Chrysanthemum Society's Exhibition of Dahlias, Gladioli, &c. (3 days).
Scottish Horticultural Association, Meeting.

SALES.

MONDAY, SEPT. 5. Important Sale of Orchids and General Stock, at the Nurseries, Bush Hill Park, Middlesex, by order of Messrs. Hugh Low & Co., by Protheroe & Morris (2 days).
Dutch Bulbs, at Protheroe & Morris' Rooms.

TUESDAY, SEPT. 6. Dutch Bulbs, at Protheroe & Morris' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.
Seventeenth Great Annual Trade Sale of Winter-blooming Heaths, at the Longlands Nursery, Sidcup, by order of Messrs. Gregory & Evans, by Protheroe & Morris (First Sale).

WEDNESDAY, SEPT. 7. Dutch Bulbs at Protheroe & Morris' Rooms.

THURSDAY, SEPT. 8. Third Annual Trade Sale of well-grown Ericas, Roses, &c., at the Mill Lane Nursery, Cheshunt, Herts, by order of Mr. E. Rochford, by Protheroe & Morris.

FRIDAY, SEPT. 9. Dutch Bulbs at Protheroe & Morris' Rooms.
Imported and Established Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—59° 3'.

ACTUAL TEMPERATURES:—

LONDON.—September 1 (6 P.M.): Max., 69°; Min., 55°.
PROVINCES.—September 1 (6 P.M.): Max., 64°; Weymouth; Min., 50°; Off Shetland Isles.

Gardening Charities.

THE discussion that has been going on in our columns for some time as to the gardening charities cannot be considered as a satisfactory one, and we hope we shall be spared from a further extension of it. The disputants argue from two different points of view. Although each may be right from his own standpoint, unless each will elect to yield a little there is no chance of their coming to a conclusion. We cannot help looking on Mr. FLETCHER as the aggressor in this case. Most assuredly he was so in the implication that the gardening charities were housed in palatial mansions, and that their salaried officials were richly endowed.

To those who know, such implications are ludicrous, but though Mr. FLETCHER has been set right on this point, he has never withdrawn the insinuation. Undoubtedly he made a great mistake in that matter, and that circumstance will, rightly or wrongly, cause his readers to discredit some of his other statements and arguments. In his remarks on the Gardeners' Royal Benevolent Institution, Mr. FLETCHER, as it appears to us, goes out of his way to disparage the institution for not doing that which its constitution does not allow it to do. It is not a Benefit Society, nor was it intended to be so; it was called a "Benevolent" Society, and so it remains. Mr. FLETCHER seems to think that every member or his representative should *de jure* receive an amount

representing the amount he has paid plus compound interest? Where does the benevolence come in, in such a scheme? Every subscriber who is actually in need does receive something more than a vote. He gets substantial relief, and it may be that he or his widow may get much more than the amount that Mr. FLETCHER says they ought to get. This could not be done if every member, whether he were in need or not, were to be pensioned off at a certain age. Gardeners, like other members of the community, are called on to exercise self-help and thrift, but the duty of helping their neighbour in his need is at least equally incumbent on them according to the measure of their capabilities.

There is room for both the Benefit Society, which is, we believe, in a flourishing state; and there is room for the Benevolent Society, which has rendered such great services to distressed gardeners and their widows. Its rules have been re-cast of late years, new regulations have been enacted, all with the object of rendering assistance to those who need it swifter and more certain. To us who have been cognisant with the Society for more than a quarter of a century, the wonder is that it is not more generally supported by the gardeners than it is. For ourselves we believe the main reason is the want of local secretaries and local branches in the various counties. Gardeners are isolated, and there is a difficulty in getting at them. Local secretaries might be appointed in various districts all over the country, and their duties should consist not merely in sitting in their garden-office and writing a few letters, but in personal visits to every gardener in the neighbourhood. Much more use might be made of local flower shows in promoting the cause of the Gardeners' Benevolent and of the Gardeners' Orphan Fund. We know that the gardener as a skilled workman is too often paid a much lower wage than is warranted by the foresight and experience he has to exercise, but after making every allowance, there still remains a large body of gardeners who could, but do not help. It is this class who make such communications as those of Mr. FLETCHER an excuse for not doing what they could well afford to do. Rather should they note what their fellows are doing in sacrificing their time, their energy, their money, for the benefit of the needy and the orphan; rather should they not feel some qualms of remorse when they see the donations that are yearly made by persons unconnected with the craft, and who cannot—be their future need what it may, receive the slightest aid in return. There are matters of detail in the working of the societies which are open to objection, no doubt. For ourselves we think the voting system bad and cruel to the candidate; but the majority of subscribers at present think otherwise, and we must wait for the light to diffuse itself. Meanwhile, all honour to the committees and the officials. They do their work excellently well. May their example stimulate the sluggishness of those who can but do not help.

Value of Moss-litter.

Moss-litter has for several years been largely used for stable-bedding purposes, it being particularly valuable on account of its high absorptive capacity for fluids and gases. A considerable quantity of moss-litter is exported from Holland, and more recently from Canada, where the supply is said to be well-nigh unlimited. Two samples obtained from Big Plain Bog and Weldon Bog, Nova Scotia, which were clean bright samples, consisting of fine straight fibres,

and free from all foreign matter, have been submitted to chemical analysis, with the following result:—

Composition of Moss-litter (air dried).

Constituents.	Big Plain Bog.	Weldon Bog.
Moisture	15.70	16.20
Organic Matter	82.50	81.75
Ash	1.80	2.05
Nitrogen	100.00	100.00
Absorptive Capacity	0.527	0.596
	1395	1533

As regards composition these samples are very similar. Their absorptive capacity is very satisfactory; their low "ash" shows absence of earth, and their nitrogen content indicates that the resulting manure would be materially enriched in this valuable constituent of plant-food.

A further and most important use for moss-litter has recently been found. It has been used with good success as a packing material for fruits and other perishable articles in transit. Its absorbent power keeps the fruit dry, and thus assists in arresting or preventing that decomposition which always follows "sweating," due to imperfect ventilation and other causes. From a hygienic, as well as a mechanical standpoint, moss-litter should commend itself as a packing medium.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Floral Committees will be held on Tuesday, September 6, in the Drill Hall, James Street, Westminster, from 1 to 5 P.M. On this occasion a lecture on the Diosa will be given by Mr. T. W. BIRKINSHAW, beginning at 3 o'clock.

"KEW BULLETIN."—The contents of the August number consist of articles upon the Coagulation of Rubber-milk; Kendir Fibre (*Apocynum venetum*, Lin.), a fibre-plant successfully used in the manufacture of Russian paper-money; Carob-tree (*Ceratonia siliqua*, L.), including a report on the cultivation of the Carob as a shade-tree, and its seeds as forage for horses when on long journeys; Shinia in Cyprus (*Pistacia Lentiscus*), used in the adulteration of Sumach (*Rhus coriaria*). Shinia is the Cyprian name of the plant. The number contains descriptions of a number of new Orchids, and short notices of Bamboo vulgaris, *Artemisia pallens*, Lemon grass-oil, hybrid Coffee, Florida Velvet Beans, now identified by Mr. F. M. BAILEY, F.L.S., the Colonial Botanist, Queensland, as *Mucuna pruriens* var. *utilis*. It is probably *M. utilis* of Wallich, described in the *Flora of British India*, vol. i., t. 280, "a cultivated variety," with velvety not hairy pods.

THE BOTANIC GARDENS, SYDNEY, NEW SOUTH WALES.—The first report of these gardens and public domains by the new Director, Mr. J. H. MAIDEN, F.L.S., is now before us in the form of a twenty-one page folio. It deals with the work in the gardens from June 1, 1896, that is from a date one month later than the Director's appointment to the post in succession to Mr. CHARLES MOORE, to December 31, 1897. It is incidentally stated that, since the establishment of responsible government in the Colony of New South Wales, reports of the gardens have been made only intermittently, and since 1878, it is believed that not any have been issued. Much new work, including improvements of the old features of the botanic garden, appears to have been undertaken. That part of the garden devoted to certain natural orders of Decotyledons has been largely remodelled, and orders of lesser replaced by others of greater importance. The space set apart for medicinal plants has been rearranged, and non-medicinal plants excluded. This portion of the grounds is much appreciated by students, and the Council of the Pharmaceutical Society of the colony has promised co-operation. A fine collection of Aus-

tralian" grasses has been planted out, whilst the non-Australian ones have received noteworthy additions. Mr. HUGH DIXON has generously made an offer of his collection of Australasian Orchids to the gardens, provided suitable provision can be made for the plants; and Parliament having granted a sum of money for this purpose, the offer will be accepted during the present year. Displays of native flowers in the cut state are being continued as heretofore, each bunch being furnished with its vernacular (where it possesses one) and botanical name, and the natural order to which it belongs. The various Government Domains come in for a considerable amount of attention, and consist of extensive areas, viz., Centennial Park, 763 acres; Garden Palace-grounds, 19

flowering; 2, whether the plants die after seeding; 3, whether the seed ripens and germinates.

MR. EDOUARD LUJA has been appointed by the Government of the Congo Free State as Botanical and Entomological Collector in the upper regions of that country. He was a member of the gardening staff of the Royal Gardens, Kew. He left this country for Africa in August.

A STANDARD APPLE-BARREL.—In view of the importance of having a barrel of a definite and uniform capacity in use in the exportation of Apples, the dealers and shippers are once more taking up the question in earnest. The advantages of the

lowing Orchids:—*Cattleya Trianaei* var. *Dutremblay*, Bert.; *Cypripedium Parksianum*, Hort.; *C. Annie Measures*, Hort.; *Dendrobium chrysotoxum*, Ldl.; *Epidendrum Brassavolæ*, Rehb. f.; *Lælia autumnalis* var. *atrorubens*, Backh.; *Odontoglossum crispum* var. *Capartianum*, O. *Cervantesii*, La Llav. et Lex.; *O. pulchellum*, Batem.; *Pescatorea cerina*, Rehb. f.; *Phaius Humbloti*, Rehb. f.; *P. Norman*, Hort.; *P. N.* var. *aureus* Hort.

THE FAILURE OF PEACHES TO SET THEIR FRUITS.—Dr. UDO DAMMER writes in a Chicago contemporary:—"Last spring I was rather surprised with the behaviour of a young Amsden Peach-tree in



FIG. 48.—VIEW OF A LAKE IN EARL WEMYSS' GARDEN AT GOSFORD, EAST LOTHIAN. (SEE P. 182.)

acres; Outer Government Domain, 90 acres; Inner Government Domain, 40 acres; State Nursery, 20 acres; and the gardens and grounds of the country residence of His Excellency the Governor, at Hill View, 300 acres. Mr. MAIDEN has more than enough wherewith to employ his time and energy.

THE FLOWERING OF *ARUNDINARIA AURICOMA*.—It may interest your readers, writes Mr. A. B. FREEMAN-MITFORD, to know that the rare event of a Bamboo flowering in the British Isles is at present occurring. *Arundinaria auricoma* is flowering at Castlewella, in Ireland, and at Batsford, in Gloucestershire. It is probably showing flower gregariously wherever it is grown, and it will be important that those in whose garden it grows should note—1, any exceptions to this gregarious

adoption of a barrel of uniform capacity are obvious to customer and dealer alike, and it will help to impart confidence to consumers, who have often been cheated in the short measure barrel. The National Apple Shipper Association and the National League of Commission Merchants in the U.S.A., have already adopted the following dimensions:—Head, 17½ inches; stave, 28½ inches between crozins; bulge not less than 64 inches outside measurement. These are the measurements of the Minneapolis flour-barrel. If this barrel be adopted in the U.S.A., the Canadians will be obliged to follow suit.

"DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES."—The number of this publication for April last has just reached us. It contains coloured plates and letterpress descriptive of the fol-

the grounds here. The tree flowered well, but it did not set a single fruit. On investigation, it was found that there is no other Peach-tree in the neighbourhood, and all the flowers of the tree in question proved on examination to be what botanists term proterandrous, that is, the anthers ripen and shed their pollen long before the stigma of the pistil is ready for fertilisation, and thus fruits are impossible, unless pollen from some other source alights upon the reproductive organs at the proper time. But all the flowers of this tree developed at about the same time, and there was no pollen available when it was needed."

THE TRIUMPH PEACH.—This is an American variety, said to be one of the best yellow-fleshed, late Peaches, of large size, and good colour, and almost a

free-stone. The fruit ripens at the same time as Alexander, and its flavour is said to be fine, and the stone small. The fruit does not readily rot, as do the early varieties, and it hangs on the tree with great tenacity.

FLOWERS IN SEASON.—We have recently received from Mr. THOMAS WARE, of the Hale Farm Nurseries, Tottenham, a pure white form of *Gladiolus gandavensis*, the spike of which is of moderate proportions, and possessing a dozen open flowers and flower-buds. A variety valuable for obtaining marked contrast with coloured varieties, or with dark-leaved plants, as *Lobelia cardinalis*, some of the *Cannas*, *Ricinus Gibsoni*, &c.

—We have received from Mr. H. LISTER, of Rothsay, blooms of a number of named varieties of fancy Pansies. Some of these are novelties, and we judge them to be of considerable merit; but the blooms were not sufficiently fresh upon arrival to describe any of them perfectly.

"JOURNAL OF THE SOCIETY OF ARTS."—Articles of interest to cultivators of the land are found in the last issue of this publication in "Wine Ferment Experiments in France" (see p. 174), the "Straw Industry in Germany," and the "Manufacture of Paper from Bamboo."

CRIMSON RAMBLER ROSE IN AMERICA.—It is stated by a correspondent in *Gardening* (Chicago) for August 18, that the Rose Crimson Rambler, as seen here in the nursery of Messrs. ELLWANGER & BARRY, is a magnificent sight just now. For several weeks it has been in full bloom, and in spite of hot and extremely dry weather, is still in first-class condition. The plants were put out a few feet apart twelve months ago last spring, and they have made a splendid growth. A trellis had to be erected to support the many strong canes which spring from the base of each plant, and this summer the breaks on these canes are so numerous that the whole forms a perfect hedge. Mr. A. G. JACOBS, of Springfield, Mass., has a Crimson Rambler Rose upon which there have been at one time 5000 buds and blossoms.

ACREAGE OF HOPS.—The following preliminary statement is compiled from the returns collected on June 4, 1898, showing the acreage under Hops in each county of England in which Hops were grown, with a comparative statement for the years 1897, 1896, and 1895:—

Counties.	1898.	1897.	1896.	1895.
	Acres.	Acres.	Acres.	Acres.
Berks ... ..	...	...	4	...
Gloucester	40	40	49	38
Hants	2,263	2,306	2,494	2,875
Hereford	6,651	6,542	6,895	7,553
Kent	30,941	31,661	33,300	35,018
Monmouth	2	2	...	...
Salop	126	129	140	150
Suffolk	3	2	4	10
Surrey	1,313	1,416	1,023	1,783
Sussex	4,829	5,174	5,908	7,489
Worcester	3,567	3,591	3,800	4,024
Total	49,735	50,863	54,217	58,940

Board of Agriculture, 4, Whitehall Place, S.W., August 27, 1898.

GOLDEN-WEDDING FESTIVITIES were celebrated at Stoneleigh Abbey on the 22nd ult., there being much rejoicing manifested on the fiftieth anniversary of the marriage of Lord and Lady LEIGH. In the afternoon was held a large garden-party, to which, in addition to the many relatives of Lord and Lady LEIGH, at the time visitors to the Abbey, invitations were extended to the tenantry and cottagers. Mr. MARTIN, his lordship's gardener, made the Abbey as gay as possible by freely decorating the rooms with plants and flowers, and at the garden-party the tables were tastefully decorated. Among the many presents submitted to Lord and Lady LEIGH's acceptance, were several from the tenantry, and one from the household servants.

CHRYSANTHEMUM FLOWERS WHEN CUT are kept fresh for a considerable length of time by the Japanese by charring the end of the stem with a splint of lighted wood, and then often changing the water.

CONVENTION OF AMERICAN FLORISTS.—The fourteenth annual convention of the Society of American Florists opened at Omaha on Tuesday morning, August 16, 1898, with an attendance larger than was anticipated. The delegations from western sections were more numerous than early correspondence had led the committees to expect. The east did not turn out as in former years, but was, nevertheless, well represented. There were many ladies present. Mr. FRANK E. MOORE, Mayor of Omaha, welcomed the convention in a ringing address. The President elect of the Society of American Florists, Mr. WILLIS N. RUDD, is young, energetic, and a native of Chicago. As president of the American Carnation Society he gained an enviable reputation for his prudent and conscientious policy.

PUBLICATIONS RECEIVED.—*The Botanical Magazine of Japan*: notes on Liukin and Formosan Plants, in the English language; contributions to the Study of the Flora of Japan, by T. MAKINO, in the Japanese and German languages, and lastly, contributions on a variety of matters in Japanese.—*Description of Four New Species of New South Wales Plants*, by J. H. MAIDEN, F.L.S. and E. BETCHE.—*Notes from the Botanic Garden, Sydney*, by the same.—*Notes of a Trip to Mount Seaview, Upper Hastings River*, by J. H. MAIDEN.—*Observations on the Eucalypts of N.S.W.*, Part III., by HENRY DEANE, M.A., F.L.S., and J. H. MAIDEN.—*On a New Species of Eucalyptus from the Sydney District of New South Wales*, by H. DEANE and J. H. MAIDEN.—*Fourth Annual Report of the Fruit Experimental Station of Ontario*. Published by the Ontario Department of Agriculture, Toronto.

A LAKE AT GOSFORD.

THE Royal Scottish Arboricultural Society indulges, as most of our readers are aware, in the laudable practice of visiting some domain in these islands or on the continent which is famed for its fine timber, or the excellence of the forest management. This year Gosford, the seat of Lord Wemyss, near Longniddry, was chosen, and a very pleasant and doubtless instructive day was passed in its woods, pleasure-grounds, gardens, and house. Gosford has the inestimable advantage as regards its mansion, woods, and gardens, of having been the property of nine Lord Wemysses in direct succession. This means much if the owners are wealthy, and inclined to use their wealth in beautifying the ancestral home and surroundings, and cultivating in a suitable way the ancestral acres, and incidentally in finding employment for their poor neighbours the tillers of the soil, &c. Such would appear to have been the case at Gosford, upon which considerable sums must have been expended by the various possessors. The effect on the landscape has been exceedingly pleasing on the whole, Nature having a happy way of hiding blemishes in design, toning down here, and heightening there; shutting out views that are undesirable, as well as those which the owner might wish to maintain, so that in the course of a century or two a place grows into a kind of beauty undreamt of by its early designers. Gosford is beautified by several lakes, or ornamental sheets of water, and the one we give this week (fig. 48, p. 181) is of a character that will appeal to such of our readers as find a delight in symmetrical growth in tree and shrub, in smooth, level, well-kept paths and turf, and the quiet beauty of still water in which the trees and shrubs on the margin picture themselves on a windless day as in a mirror.

Another lake has less of the finished tameness of this one, seeing that it has gnarled old pollards of Oak and Elm at one end, and big Birches at the other, the necessary connecting link between the groups consisting of trees of lesser height. A third

lake possesses more variety in its planting and surroundings, although the materials on which pictorial effects depend are severely simple, viz., Scots Fir, Weeping Willows, Italian Cypress, and Lombardy Poplar, the rest consisting of low masses of shrubs and brushwood. The effect as a whole is extremely satisfying. We do not know anything in a garden which is so readily spoiled by improper planting as a piece of still water, and the smaller the area the readier. For instance, the beauty of water of this kind, lies in its glistening sunlit rippling surface, and let it be closed on its S., S.E., and S.W. sides by close planting, and these effects disappear more or less according as the planting is near or further removed. Then, instead of light, there are long black shadows shot across the surface excepting at about noon.

Again, not much of the water should be hidden from the view of the pedestrian, as is sometimes done by planting wide masses of tall shrubs. Here and there small clumps of such are admissible for variety sake, as are Conifers and deciduous trees of similar growth, which have a good effect by the contrast they afford to the horizontal water-line; and some of these, singly or in small groups, ought to approach the water-side closely where their shadows will fall only in early morning or evening. If a lake have promontories or abrupt points, these may be raised in some cases, and planted close up to the water with striking-looking trees, Bamboos, dark Firs, as *Pinus Strobus*, the Weymouth Pine, &c., being good ones to use. Planting of this kind affords surprises, as the stranger is unexpectedly brought into what may be made a totally different sort of landscape.

Mr. Fish, who kindly sent the photograph from which the figure was prepared, sent others, but these were less suited to our purpose; and we are indebted to him for a lengthy account of Gosford, for which, however, at the present time we have no space.

FLOWER-GARDENING AT THE "ZOO."

IN our issue for last week, we gave in the words of a correspondent hailing from Northern Britain, his enthusiastic impressions of what he was pleased to call the new flower-gardening, but which is really not so very new either, as witness the methods pursued at Battersea Park, where the first example was set by the late Mr. Gibson, and perfected, as far as materials then allowed, by his successor, the late Mr. Rogers. From this point in South-west London the fashion spread to other public parks, and to private gardens, one of the best examples of the latter being Blickling Park, near Aylsham, in Norfolk.

The method of mixing plants of differing heights, habit of growth, colour of leaf and flower, in more or less profusion, over beds filled with dwarfier plants, was not long in finding admirers among those owners of gardens who had grown dissatisfied with bedding-out in the ordinary sense; and gardeners, too, were not long in perceiving its advantages in the lessening of the labour involved in propagating and storing the innumerable hosts of plants that the old method demanded, and they also appreciated the beauties of the new method. The head gardener of the Zoological Gardens, Regent's Park, Mr. Young, is a Scot whose younger days were spent in some excellent schools of gardening in his native country, and who entered on his duties about eighteen years ago, just, therefore, at the period when people generally were looking about for a change in flower gardening. We found him at home busily engaged with preparations for the recent Zoological Conference, but not so much so, but that he could spend an hour in looking round the best parts of the gardens. The first parterre visited adjoins the main entrance where pink and purple-flowered East Lothian Stocks were arranged in lines on opposite borders, among them being numerous plants disposed in rows of his particularly dwarf strain of *Celosia pyramidalis*, beautiful in their colours of crimson, golden yellow, and orange. These *Celosias* impart effects different from any other plant with which we are acquainted.

In another border in this part, to the right hand,

we noted as a ground-work plant, and a very charming one too, *Pilea muscosa*, the old Artillery plant of our stoves; also *Asparagus plumosus*. The former has a cool, restful effect, clothes the ground without any labour on the part of the gardener in pegging

musaica, valued for its handsome leaf-colouring. As back-ground plants, we remarked huge plants of *Phormium tenax* and *Dracæna australis*, which, we believe, are not housed in the winter. Fuchsias are freely used in other beds, sometimes mixed with

15-inch bands of the yellow-foliaged Moneywort, and others with the abundant-flowering *Königa maritima*. *Pelargoniums* Henri Jacoby, and *Omphale*, a pink nosegay, mixed with *Celosias*, are used here; and as an edging, *P. Princess Alexandra*, which has a purer variegated leaf than *Flower of the Day*, although it is in the same way. *Begonia rosea* shows capitally when *Celosias* are used among the plants, and a bed of this kind edged with some scarlet *Pelargoniums* was telling. An excellent dark blue *Lobelia magnifica* was largely used as an edging to beds of mixed *Pelargoniums*. Four of the beds in this parterre were planted with *Firefly Lobelia*, *Abutilon Souvenir de Bonn*, and *A. Thompsoni variegata*, the former having the clearer variegation. Underneath a whitish flowered *Begonia* was planted.

A nice effect was made near the Monkey-house with *Canna Alphonse Bouvier* on a ground-work of *Mrs. Pollock*, the bed having a blue *Lobelia* edging. A bed of *Coreopsis tinctoria* mixed with white-flowered *Marguerites* was an agreeable change, as was a border of *Ricinus Gibsoni* mixed with *Nicotiana affinis*, the white flowers of the latter making an effective contrast with the coppery leaves of the latter—and then the fragrance of an evening!

The parterre near the bear's dens was gay with new *Cannas* planted among *Iresine Brilliant*; and along the border was a long line of *Marigold*, Purple and Gold—a pretty floriferous dwarf-growing variety. In a bed near the lion's house standards of *Hydrangea paniculata* 4 feet high are employed, with some zonal *Pelargoniums* underneath them, *Viola Bluebell* and *Centaurea* forming the edging.

The flower garden proper contains a good many beds, in which the same method of planting is followed as that previously alluded to. We give a few examples. *Begonia Corbeille de Feu* mixed with *Chlorophytum aureum variegatum*, with a *Lobelia* edging. Another had *Violet Hill* nosegay *Pelargonium*, *Cannas*, and *Dracæna australis*, with an *Araucaria excelsa* in the centre. One was filled with *Madame Cornellissen* *Fuchsia*, with mixed *Salpiglossis*, and *Viola The Mearns*. This kind of bed was repeated with slight alterations in the constituents. *Erigeron*, with pale blue blossoms, *Hydrangea paniculata*, *Lobelia cardinalis*, and golden-leaved *Privet*, were employed together. The most pleasing *Fuchsia*-bed, to our idea was, perhaps, the one filled with *Abd el Kader Fuchsia* and *Viola W. Mee*.

Our readers will readily believe that Mr. Young's endeavours to impart novelty to the furnishing of the beds and borders at these gardens have been eminently successful from whatever standpoint we regard them, and his handiwork is well worthy the attention of alike the amateur and professional gardener.

MOVEMENTS OF PLANT-FOOD BEFORE THE FALL OF THE LEAF.

ONE of the more recent contributions to this subject appeared in the March number of the *Zeitschrift für Forst und Jagdwesen*, from the pen of Dr. Romann. The author comments on the fact that previous investigations have been usually undertaken with *Beech* leaves, which, owing to their liability to variation in structure and composition with the amount of light they receive, can hardly be considered the most suitable for the purpose; nevertheless, in order to obtain results which admitted of comparison with those of other investigators, the leaves of that species were chosen in the present instance, together with those of *Oak*, *Hornbeam*, and *Hazel*. A given quantity of leaves of these species, gathered from carefully selected branches, was obtained monthly from the beginning of June to the end of August, and at the middle and end of September. These were weighed, counted, and their superficial area and average size and weight ascertained, and their composition carefully ascertained by analysis, so far as the ash was concerned, and the proportion of nitrogenous matter. An analysis was also made of the ash of 100,000 square



FIG. 49.—A VIEW IN THE GROUNDS, BICTON. (SEE P. 177.)



FIG. 50.—POND BELOW THE FLOWER GARDEN, BICTON. (SEE P. 177.)

down, and forms a capital setting for bright flowers; the latter grows about 1½ foot high, and is of a darker shade of green. Growing among these, and creeping close to the earth, was our old conservatory friend the *Abutilon megapotamicum igneum*, then more *Celosias*, interspersed with *Acalypha*

Phlox Drummondii, and edged neatly with *F. Golden Treasure*; the taller being *Bountiful*, a free-flowering, dark-flowered variety.

In an oblong parterre of turf the beds were diamonds and triangles, and here *Celosias* were extensively employed, some of the beds being edged with

centimetres of leaf-area. From this it was ascertained that about the beginning of June the soluble mineral substances reached an average proportion, which remained unaltered until the autumn. This held good for potash and nitrogenous matter, almost without exception. Phosphoric acid appeared to show a slight increase towards the autumn, perhaps a result of the separation of insoluble compounds. On the other hand, those substances which are partly separated in an insoluble form, such as lime, either increase until the period of assimilation is finished, or they attain a maximum proportion and then remain stationary, as in the case of silicic acid. In any case, no return movement of material could be noticed up to the end of September, and for so long a time as assimilation went on, the occasion for such a movement would not arise. This could only be expected to take place upon the death of the leaf; and the climatic conditions of last autumn were particularly favourable for observing this point, partly green leaves being plentiful in the middle of November, after a period of dry weather. About this time, green and autumn-tinted leaves were gathered from the same branches, the tinted leaves being still turgid, and showing traces of chlorophyll. There was, therefore, little probability that dew or rain had washed any substance out of the leaves, and only those of the Hazel showed any signs of injury from frost.

Testing with iodine proved that all the green leaves were rich in starch, with the exception of those of the Hornbeam, which were taken from shaded under-wood. The yellow leaves, on the other hand, showed little trace of starch when tested. Analyses of the leaves were made as before, with the following results:—

Beech.—The tinted leaves showed a decrease in phosphoric acid and nitrogenous substances, and a strong increase in silicic acid and potash, and moderate increase in lime.

Oak.—Phosphoric acid and nitrogenous matter considerably decreased in the tinted leaves, potash remained about the same, and lime and silicic acid were nearly the double of quantities found in the green leaves.

Hornbeam.—A decrease of potash, phosphoric acid, and nitrogenous substances, and a moderate increase in silicic acid.

Hazel.—Nitrogenous matter showed a strong decrease, and potash was slightly reduced in quantity, while phosphoric acid remained about the same. Lime and silicic acid had greatly increased. The author discusses the possibility of other causes having brought about the observed results, the most probable of which would be the washing out by rain of the substances in question, especially the alkalies. The conditions under which the material was collected, however, rendered such a contingency extremely unlikely in the present investigation. The difference in the proportion of mineral matters in the leaves must be attributed to physiological influences, and is connected with the death of the leaves.

Dealing with each of the most important constituents of plant-food individually, the percentage of these substances in the dead leaves, compared with those contained in the green ones, which are given as 100, are:—

Leaves.	Nitro- genous matter.	Phos- phoric acid.	Lime.	Potash.	Silicic acid.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Beech ...	85	25.6	109	135	123
Oak ...	25.6	31.9	209	94	213
Hornbeam ...	25.6	33.9	—	69	134
Hazel ...	26.8	0	133	89	173

Summing up the results of the whole investigation, the following conclusions are arrived at—

1. During the period of growth in the Beech (and probably in other trees), the proportions of mineral substances in the stem and leaves become equal early in the season, and remain unaltered until the growing season is finished so far as the soluble substances are concerned; and substances which are partly separated in an insoluble form gradually increase in the leaves.

2. With the death of the leaves, probably upon the cessation of chlorophyll functions, until the drying-up or death of the leaves, considerable movements of mineral substances take place as follows:—

a. Nitrogenous substances and phosphoric acid return into the shoots of the tree, this movement probably being in connection with the separation of insoluble albuminoids.

b. Lime and silicic acid move into the leaves, that of the former probably being connected with increased oxidation in the leaf organs.

c. Potash may either remain stationary or return into the stem, or move out into the leaves, according to circumstances. *A. C. Forbes.*

A FINE PLANT OF DENDROBIUM DENSIFLORUM.

WE have on many previous occasions presented our readers with illustrations of finely-cultivated specimen plants, and among them many species of the popular *Dendrobium*. In fig. 51 is represented a plant of *D. densiflorum*, cultivated in the gardens of C. L. Wood, Esq., Freeland House, Perthshire (gr., Mr. Sharp). The specimen has, says our correspondent, 265 pseudo-bulbs, and the width of the plant is 5 feet. The species, being common, most of our readers are doubtless familiar with its pendulous amber-coloured flowers, with orange-coloured lip, beautifully fringed. It is an erect-growing evergreen species that flowers in April and May, and at the present date plants should be making active growth.

HOME CORRESPONDENCE.

DAHLIAS.—Objections have been raised of late to new Dahlias, owing to the foliage obscuring the flowers. I am not sure that the varieties are altogether at fault in this respect, but am inclined to look upon it as a result of heavy watering at the wrong period. The Dahlia, in its native country of Mexico, makes its growth during the period of heavy torrential rains, flowering when they are practically over. With this fact in my mind, I water my Dahlias heavily (occasionally with manure-water), literally soddening the ground till the first flower appears, with the result of producing thick succulent stems in robust health, bearing fine large leaves of the dark green hue so much prized. I then withhold watering altogether, unless the plants flag considerably, when I give one or two good waterings to tide them over a very dry time, the heavy dews which fall in August and September, refreshing them under ordinary conditions. The results of this treatment are flowers well set up among the foliage, a greater number of flowers on each plant, the colours intensified, and flowers perfectly regular, the subsidiary growths being to a certain extent smaller, but still healthy, bearing flowers equally as fine as the first flowers produced. The tubers, when lifted, do not show any shrivelling from this treatment, are not quite so large as those watered throughout the season, but they have much tougher skins which do not bruise readily, and if stored on a dry cellar floor, come up in the spring as plump as when they were put away; no sweating of the tubers occurred during storage, and there was a consequent absence of fungus and rot. I gather from this that the plants draw from the tubers all superfluous moisture, and that a long and thorough process of ripening of the tubers takes place prior to lifting. In support of this process, I have noticed that Dahlias this season have exposed their flowers better than in previous years, owing to a practically rainless August in this county (Middlesex). *Geo. B. Mallett.*

THE SCHOOLMASTER ABROAD AT ABERDEEN.—At the flower show held in the Duthie Park recently by the Aberdeen Royal Horticultural Society, a visitor observed that "the idiotic wording of the prize schedule passes the comprehension of any sane man, and it would tax the ingenuity of an Aberdeen professor of metaphysics to make sense out of it." The following couple of examples, quoted from the schedule of prizes for the present season, are enough to enable readers to judge of the justness of the irate visitor's comment. In the cut flowers section of the schedule, class 37 is defined as follows:—"One col-

lection of twenty varieties cut flowers, and fine foliage bedding plants, including annuals best adapted for flower garden decoration, each sort to be in bunches and in pots, on a space not exceeding 2 feet by 3 feet." The second example of Aberdeen perspicuity is quoted from the fruit section, where class 56 is defined as being, "One collection of fruit, nine dishes, distinct varieties, but not more than two dishes of any species or kind of fruit. Pine-apple excluded." The result of the latter obfuscated definition was the disqualification by the judges of what was decidedly the best collection of fruit, because the exhibitor had set up two dishes of distinct varieties of Peaches, and one dish of Nectarines. In the drafting of the schedule the "Royal" of Aberdeen had got muddled over "species" and "kind," and a course of study of the *Rules for Judging, &c.*, published by the Royal Horticultural Society, London (post-free for 1s. 1d.), would be a benefit to the Society, and to the competitors at its shows. *M.*

IDIOSYNCRASIES OF JUDGING.—Were it possible for any industrious person to collect all the odd things one hears and sees from time to time done by judges at flower-shows, a very interesting and curious volume would result. Your correspondent, "Vitis," told last week of two very funny things, so singularly contradictory, for in the one case the exhibitor who did show in accordance with the terms of the schedule was disqualified, whilst elsewhere the man who did not do so obtained a prize. When I reflect on the time, as well as labour, expended in preparing the *Code of judging-rules* for the Royal Horticultural Society, it is lamentable to find, after all, how little the valuable work of that committee seems to be understood or appreciated. Very recently, at an important southern show, an exhibitor who put into a collection a few foliage plants, was disqualified because the judges said the exhibit was not in accordance with the terms of the schedule. The class included fruits, cut flowers, (note the comma) and foliage, but did not say cut foliage. On what grounds, therefore, was the exhibit disqualified? But a singularly odd judgment occurred at the same show in the class for "any other white Grape, Muscat of Alexandria excluded." One competitor showed bunches labelled Canon Hall Muscat; these the judges (ducal ones too) declared to be Muscat of Alexandria! and then proceeded, in complete defiance of the conditions of the class, to give them the 2nd prize. Could anything be more absurd? Really, the Grapes were disqualified, the 3rd prize competitor was defrauded out of the 2nd prize, and the man who should have been 3rd was robbed of his prize absolutely. *D.*

BRITISH BLACKBERRIES.—I referred recently to the garden culture of *Rubus laciniatus*, the Cut-leaved Bramble. A few days since I saw the finest fruiting-breadths of the common Bramble I have met with anywhere in enclosed grounds, and almost in London. This was at Tewkesbury Lodge, Forest Hill, the residence of C. Bayer, Esq., so famous for the excellent Grapes which come from the vineries. The grounds cover the apex of a very lofty mound of almost solid clay. So lofty is the mound, that some of the finest views conceivable can be obtained from it; indeed, on a clear day, all the world seems to be at one's feet. On the London or north-westerly side of this huge mound is some semi-wild ground, probably the last vestiges of the forest from which the locality takes its name. This area of several acres in extent is literally covered with Brambles, growing luxuriantly, and fruiting abundantly. Although so lofty, so exposed to winds, yet the Brambles were not only fruiting heavily, but early, for there were bunches of fruits ripe, and fit for eating. Now it is notorious that in towns, and in London in particular, good Blackberries find a profitable sale—indeed, are in great demand. Seeing, therefore, how well the Bramble thrives on this heavy clay soil, and in so elevated a position, the question arises—could not similar areas of stiff clay, now practically valueless, be sown or planted with Brambles, and thus made productive? Would not many of the Essex fields, reputedly given over to weeds, well repay for utilisation in this manner? The ground should be planted in long ridges of 10 feet wide, with narrow paths running between, and the plants kept trimmed, to enable free access to be obtained, and the fruits carefully gathered. *A. D.*

THE HARDINESS OF HYBRID TEA ROSES.—The fact that Teas make late growth and flower late in the year is taken as proof by some that these Roses are by nature too tender for the generality of gar-

gardens. But is that so—is it not more a question of proper ripening of the growth? Some years ago numerous Oak-trees which had weathered many a zero winter, were killed by a late summer frost of 10° severity. That did not prove that the Oak is a tender plant; it merely showed that its young leaves and shoots are not proof against so much cold as then prevailed. Admitting that late blooming favours tenderness in Hybrid Tea Roses, and that the Teas and Hybrid Teas are still our best Roses, if not our most trustworthy "perpetuals," we have only our capricious climate to thank for occasional losses. One of the ablest authorities on this subject writes in a contemporary, and the writer and the place from which the letter was written give special value to the statement. This is what Mr. Simpson, the manager to Messrs. D. & W. Croll, of Broughty Ferry, N.B., says:—"We find that Teas and hybrid Teas are invariably the earliest to flower, and also the latest. We find also that they are quite as hardy as the hybrid Perpetuals (the italics are mine), and much freer in blooming, and are the favourite class in this district. Some seasons we have had 12° of frost during the third week in May, and in some winters the temperature has gone as low

these statistics of dates of first blooms: they are hardly reliable as safe statistics to guide the exhibitor. For instance, the first blooms of 1898 are little or at all behind those of 1897, and yet the average of Roses for showing this season lagged about a fortnight behind those of 1897. D. T. F.

THE TRADE IN GRAPES, AND OTHER MATTERS.
—I want to suggest to the growers of Grapes in this country that it would be well worth their while to adopt the plan which has been found to work so well with Strawberries, viz., packing up a certain quantity in a punnet, and then packing these punnets into a case. The punnets, or baskets, whichever may be most convenient, would arrive at the shops ready for sale, without any handling, or necessity for disturbing the fruit. A basket that can be sold at 1s., 1s. 6d., or 2s. is what is required. It is well known that there are about 65,000 people who visit the metropolis daily who are in a position to buy this quantity of fruit, and if they can walk into a shop and see a basket that is quite ready for their hand, they put down their money and take it away. As Grapes are now sent to the market in baskets weighing from 8 to

at the one through charge. This is another great advantage people have, especially in the country, of sending food to the metropolis, and other large cities. As I would like to thrash out this subject, it is well to mention that owing to this combination of railways in the parcel system, there is no delay, comparatively speaking, in regard to live poultry and garden produce. I last week received some live poultry from Cornwall, and it was delivered in Surrey just as quickly as it would have been delivered in London. If Grapes, which are such a luxury when travelling by rail, could be sold at the railway stations, all ready packed in little baskets with a handle, as they are on the continent, I am sure an enormous quantity would be sold, and the profits of the growers greatly augmented; but if the growers are content to go on as they have been, they must not be surprised if the price further declines for fine English Grapes. Thos. Christy.

MR. P. R. MORSE'S FRUIT FARMS.—In my note on p. 138, I inadvertently gave the name of Mr. Young as being manager of the Hatfield Peverel vinerias, instead of that of Mr. Strong, who has ably filled that post during the last seven or eight years. H. W. Ward.

VERONICA PARVIFLORA (Hooker).—The portrait of Veronica Dieffenbachii on p. 155, suggests to me to recommend again for gardens a most useful and admirable shrub in this class—*V. parviflora*—described and figured in the *Botanical Magazine*, t. 5965. I draw attention to it because it is the hardiest, most free-flowering, and quickest-growing, of all that I have tried, and invaluable for cutting. Self-sown seedlings come up in great abundance, and if these are planted in any spare warm corner, they produce flowering shrubs a foot high when two years old. The flowering season lasts from July to October, different individuals flowering at different times, according to age and situation. At four or five years old they are 4 or 5 feet high, and if they do not die in the winter, become ragged, and are better replaced by younger plants. At Edge it is as hardy as *V. Traversii*, which is generally spoken of as the hardiest of the genus. It is true that a severe winter will kill all the large bushes of it, and many of the smaller ones; but a potful of two-year-old shrubs is so easily kept in a frame, and they root so readily when planted out, that there is no excuse for losing it. It is now several years since young plants have been killed here in the open air by winter, yet this garden has by no means a favourable soil for tender shrubs to winter in. C. Wolley Dod, Edge Hall.

WASPS AND WASP STINGS.—The very serious consequences, almost sudden death, following the sting of a wasp at the root of the tongue noted in your last issue, p. 164, shows that extreme care should be exercised when picking and eating fruits of any kind during a season when these pests are so uncommonly numerous as they are this year. It may be of use to make it known that common salt applied freely in cases similar to the above has been known to act efficaciously, by reducing the swelling, and probably saving the life of the patient. A case has come under my notice here within the past few days, where a woman on this estate was stung in the throat by a wasp which she had swallowed with some jam. Salt was promptly applied both inwardly alone and in mixture with vinegar, and also rubbed on outwardly, and this in all probability saved her life. No doubt prompt application is desirable; but as this homely remedy is nearly always at hand, the fact of its usefulness should be made known. C. Herrin, Dropmore, Maidenhead.

SEVERE STORM IN OXFORDSHIRE.—On the evening of Sunday, August 21, a violent thunder-storm raged in this district, accompanied by a high wind, the lightning being more vivid and continuous than I have ever witnessed in this country. It passed over the district in a N.N.E. direction about 8 P.M., and at that time three distinct storms were evident, one far away, bearing N.N.W., another to the W., probably following the course of the Severn, the lightning striking a Sequoia gigantea 45 feet in height, growing on Lord Moreton's home farm (Fairgreen), cutting off the top intact for a space of 15 feet, tearing the bole into splinters to within 6 feet of the ground, where the tree girths 13 feet, and scattering them in all directions within a radius of 80 yards, one alighting on the roof of the farm-house, 35 yards distant, being forced in between the tiles, at a considerably higher elevation than the struck tree. So far as I am aware, this is the first instance of a tree of this species being wrecked by lightning. The



FIG. 51.—A FINE PLANT OF DENDROBIUM DENSIFLORUM, HAVING 265 PSEUDO-BULBS.
(SEE P. 184.)

as 0 Fahrenheit; and though entirely unprotected, still these Roses live, and subsequently grow and flower abundantly. This year they are exceptionally strong, many of our dwarf Teas having, on June 28, shoots over 2 feet long, and all with strong flower-buds, which checked the short growths weeks ago. We rather like a cool season here, as it suits hybrid perpetuals so much better than a hot one." Having seen the Broughty Ferry Roses in 1896, and again in 1897, I can testify to the truth of this statement. From the middle of July to the middle of August was the time of their greatest beauty. The following is a list of first blooms cut in the Dalhousie nursery, Broughty Ferry:—1893: Cut-back, May 30, Rubens variety; Maidens, June 7, Distinction. 1894: C.-b., June 6, Rubens; M., June 15, Marie Van Houtte. 1895: C.-b., June 10, Rubens; M., June 4, Grace Darling. 1896: C.-b., May 26, Grace Darling; M., June 1, Gloire de Dijon. 1897: C.-b., June 9, Bardon Job; M., June 25, Grace Darling. 1898: C.-b., June 7, Bardon Job; M., June 15, Bardon Job. These two last entries seem to be the most satisfactory of the series, the maidens and cut-backs being of one variety. The difference in date of blooming may be all credited to the differences in the ages and character of the plants. Another point occurs to me, in reference to

15 lb. each, it necessitates the handling, weighing, and re-packing of the Grapes. The consequence is that they are neglected, with the result that anyone looking at your scale of prices in the wholesale market of London will find 8d. to 9d. per lb. is the price for good English Grapes. There was found some plan of obtaining small baskets with handles for Strawberries; and the shops did not charge for the baskets this year. These same kind of basket could be filled with Grapes. I noticed that on many of the baskets was the name of the grower of the fruit. If this plan were adopted in the case of Grapes, it would be a splendid advertisement for the grower, and it would very soon be known that a fruiterer could order twelve or fourteen baskets of Grapes packed in a crate or case. I am led to make another suggestion which may have been lost sight of by growers. The Post-office began to carry parcels and greatly assisted trade and commerce, but the railway companies then found that their business in parcels was slipping away from them, so they combined, and now parcels brought to any railway station on any line will be delivered at the one through fixed price, instead of having to pay separate charges, one for each railway; and, further, the railway companies deliver within a certain radius of their railway stations

lightning also struck an Oak and Elm on the Sarsden estate, which is of frequent occurrence. Rain to the depth of .22 of an inch fell. *James A. Smith, Sarsden Gardens, August 29.*

ROSE, CRIMSON RAMBLER.—I am pleased to see your correspondent, "E. S. Woking," holding the same opinion as myself as regards the pruning of this Rose. At Bicton this variety has its shoots pegged down on a bed 8 yards long by 2½ yards wide, and these flowered well last year, and threw up several very strong growths, which we bent over on either side to check the flow of sap a bit, leaving last year's flowering growths on the bed. The only pruning afforded the plants was to shorten the side growths which had borne flowers, and these started away strongly in the spring, nearly every growth carrying a truss of flower. Early in July we were rewarded with such a blaze of colour that it will not soon be forgotten, the whole plant carrying nearly 700 trusses. *J. Mayne, Bicton.*

SCOTTISH MANSE GARDEN.

MINE may be described as an old-fashioned garden, somewhat modernised. It is environed on almost every side, at a convenient distance, by lofty trees, for the most part Sycamores, Ashes, and Beeches, which defend its cherished treasures of fruit and flower from the devastating winds. Towering above the north wall (which chiefly gives protection to my half-standard and climbing Roses and Oriental Lilies) is a lofty Hawthorn hedge, which looked last May, when in full blossom, as if it had been covered with a shower of snow, through which that loveliest of climbing-plants—*Tropæolum speciosum*—which there finds the coolness and freshness its nature demands, grows and flowers during the months of summer, to a height of 15 feet. It is at present the noblest floral picture in my garden. I have never seen it half so picturesque elsewhere. No doubt its effect is greatly enhanced by the dense environment of dark leaves, an artistic contrast which I anticipated before planting it there. Its requirements are chiefly these:—(1), deep planting of the roots; (2), a half-shady situation; (3), abundant moisture, to keep it fresh and green. It is not in every region or climate that this superbly endowed plant perfectly succeeds. "Ah, that lovely *Tropæolum*!" says the Dean of Rochester, in one of his many charming letters to myself, "which will not thrive in the south of England, but clothes your Scottish cottage-walls with such abundant glory! I plant, and plant, and find feeble acknowledgment, and then, farewell!" If it does not succeed at Rochester Deanery, it is not for lack of loving attention. Some years ago, the Rev. H. H. D'Ombraïn, another accomplished horticulturist, when writing to me for strong roots of this exquisite climber, told me he did not altogether despair of making it a success in a shady corner of his garden. I can only trust that his hopes have been fulfilled. *Tropæolum speciosum* is valuable for more than its flowers, for after they have faded they pass into other fascinating forms of beauty; they are succeeded by pretty berries which, after passing through various shades of colour, find their culminating grace in turquoise blue. I have many other climbers which grow up old Apple-trees veneratively preserved, and produce at this period very striking effects: chief among these are Mr. Eckford's Sweet Peas, whose colour and fragrance are alike delightful; *Tropæolum majus*, the great Nasturtium; *Linaria cymbalaria*, with exquisite miniature lilac and white flowers; and *Tropæolum canariense*. These give to any garden, where they can be grown artistically, quite a tropical aspect.

Roses I also grow very extensively, and with gratifying success; I have at present 185 distinct varieties of the queen of flowers. These extend, chronologically, from the Austrian Copper (Gerard, 1596), to Empress Alexandra, 1897. One of my finest Roses, Mrs. James Cocker, a variety which recently gained the Gold Medal of the National Rose Society, has not yet been introduced, and I greatly question if any other cultivator, apart from the raisers, has yet had the privilege—unless at exhibitions—of seeing it in bloom. I have always devoted great attention to the parentage, the characteristics, and what may

be termed the eccentricities of Roses, and find those studies exceedingly attractive. The present summer has been somewhat too sultry for certain varieties, especially for Turner's far-famed Crimson Rambler, whose flowers soon lost their rich and vivid colour on my warm west wall. In shadier situations it is a more assured success, its blooms manifestly requiring such a position for the preservation of their freshness.

My Carnations are for the most part border varieties, which, in addition to their hardiness and floriferousness, have mostly the valuable attribute of fragrance. Among the best of these are Uriah Pike, which has finer petals and opens more smoothly than any dark crimson variety with which I am acquainted; Adonis, a beautiful new, pure white Carnation, raised by the Messrs. Turner, of the Royal Nurseries, Slough; Germania, a refined, yellow bloomer, still the finest of its colour; King of the Scarlets, Salamander, and Desdemona, which is an unusually strong grower, of a beautiful pink complexion, possessing a perfume rivalling that of the Old Crimson Clove.

Among other favourite flowers in my garden are Irises, Aquilegias, Violas, Delphiniums, Dahlias, Chrysanthemums, and Montbretias. Spanish and English Irises grown picturesquely among the Roses have a charming effect. Iris stylosa, and the Crocus-like Iris reticulata, which I first introduced on the recommendation of my friend, Mr. F. W. Burbidge, are valuable varieties. I have a large and most interesting collection of Asiatic, European, and American Lilies, among my latest acquisitions being Liliun Henryi, which grows stronger, like some of the Martagons, every year; L. longiflorum Takesima, and L. formosum; and the extremely graceful and richly fragrant L. Washingtonianum rubescens, which is a native of California. I think it is likely, from what I have learned from Dr. Wallace and Mr. J. G. Baker of its floral capabilities, that the recently introduced Liliun rubellum (described by the latter authority on Lilies' in a previous issue of the *Gardeners' Chronicle*) will prove much more reliable than its handsome predecessor, L. Krameri, which was originally discovered by Mr. Kramer, growing at a great altitude among the mountains of Japan. *David R. Williamson.*

SOCIETIES.

ROYAL HORTICULTURAL.

Meeting of the Committees at Chiswick.

FRUIT AND VEGETABLE COMMITTEE.

AUGUST 30.—A meeting of the Fruit and Vegetable Committee was held on this date. Present: the Rev. W. Wilks, and Messrs. J. Cheal, A. F. Barron, W. Pope, A. Dean, C. Herrin, R. Fyfe, and W. Poupart.

A very extensive collection of Onions was first examined. The varieties were represented by plants raised from sowings made in the autumn of last year; one row transplanted from the autumn sowing, and one of a spring sowing. During the winter, although the original plant was an excellent one, many of the varieties, and notably the Tripolis, usually so universally sown at that season, suffered very much from frosts, being in several cases almost decimated. The best results in almost every case were found in varieties commonly grown as summer Onions. Some of these gave capital bulbs. The following were eventually selected for three marks each:—Banbury Cross, Nuneham Park, Wroxton, a fine globe-shaped stock; Rousham Park Hero, Sutton's A1, very fine indeed; and Cocoa-nut, also first-rate, had previously received awards. Giant Zittau, Golden Rocca, Cranston's Excelsior, Trebons, and Eclipse were very good.

Next an extensive collection of Potatoes was examined, several roots of each being lifted. The earliest varieties, whilst very nice, were rather small; but of the later ones, some gave superb crops of fine handsome tubers. Very little disease was seen, but some very coarse tops had induced spearing or growing-out, or else only a mass of root-stolons. Thirteen of the most promising croppers were selected for cooking, and when later tested, all being admirably cooked, three marks were awarded to Challenge, a white round, great crop of handsome tubers, and of capital quality; The Major, a medium-growing variety, tubers flattish-oval, white, and abundantly produced; The Queen, white, flattish-round, very abundant cropper; The Devonian, white kidney, capital cropper, top upright, moderate tubers of special excellence in flavour; Ellen Terry, tubers longish, white, a great cropper; Fishtoft Seedling, a grand field variety, tubers large, white, rough in skin, and excellent; and Ivotop, medium tubers, semi-kidney form, good cropper,

selected for excellence last year; this is from the Canary Islands. The new varieties this year were late ones, an unusually good lot.

Tomatos were next examined, but there was not a great deal of novelty in them; the best were St. Simon, fruit medium round, very rich colour, and a good cropper. Stirling Castle, a great cropper, fruits of moderate size, and of capital quality. Peach Yellow, skin primrose colour, flesh of delicious flavour; and Semperfructifera, a variety that produces in wonderful abundance small, red, pear-shaped fruits. This received two marks as a decorative variety, and the others had three marks.

A collection of Beets was seen, and Cheltenham Greentop W. Good was recommended for a First-class Certificate; and three marks were given to a capital stock of the Blood-red Globe, which is now so much improved in form and colour of flesh.

BATTLE FLOWER SHOW.

AUGUST 24.—The day opened dull and cloudy, and pessimists were foretelling a wet time as disastrous as that of last year; but by noon an east wind set in, and all doubts as to a fine day were set at rest.

The committee may be again congratulated on bringing together an admirable display, while the exhibits were so even in excellence, that it would be invidious to particularise; though to the fruit, as usual, must be given the premier position. This was no doubt in a great measure due to the period of the exhibition, and to the acknowledged excellence of the skill used in its production. The almost perennial success of the show is due greatly to the individual help given by the committee, to their indefatigable secretary, Mr. R. B. Allwork, and to the fact that by the gracious permission of Her Grace the Duchess of Cleveland, the exhibition was held in the historic and beautiful grounds of Battle Abbey.

KINGSWOOD AND WEST GLOUCESTERSHIRE HORTICULTURAL.

AUGUST 24.—This popular flower-show was held on the above date, and was one of the most successful ever experienced. Kingswood is a great industrial centre, and many of the working-men are keen florists and plant-growers, having small greenhouses, in which they grow excellent specimen-plants. It is unusual to see a working-man exhibit a well coloured Croton, an Allamanda, or Clerodendron. But it can be seen at Kingswood.

Plants.—Mr. JAMES CYPHER was there with sixteen very fine specimen-plants, six of foliage, and ten in flower. He made a background of splendid Palms, having in the front a line of the fine flowering-plants he is accustomed to exhibit; Mr. W. VAUSE, Leamington, was 2nd.

In the various classes for flowering-plants, Begonias, single and double, were represented by well-grown and flowered specimens, the best eight single varieties being staged by Mr. J. ROGERS; and the best eight double by Mr. C. Cornish, gr. to F. J. FARR, Esq.

Well grown plants of zonal Pelargoniums were also to be seen. Petunias in pots, which are well done in several districts in the west of England, were good here, especially the double varieties; one singular feature is the huge pots in which they are grown. Gloxinias, Japan Lilies, Coleus, and a few other plants find places in the schedule, and though good, they were not of a character to call for special remark.

Groups of eight exotic Ferns brought medium-sized well-grown specimens, one collection had *Todea pellucida* and *superba*. Mr. GEO. TUCKER, Helperton, Trowbridge, took the 1st prize.

There were some pretty groups of plants arranged for effect, and Mr. JAMES CYPHER took the 1st prize.

There were classes for stove and greenhouse plants shown by amateurs, Mr. W. Rye, gr. to Capt. BELFORD, taking some of the leading prizes. With six specimens Mr. Rye took the 1st prize. Mr. Rye had the best six exotic Ferns, and here also could be seen specimens of *Todea pellucida* and *T. superba*. Mr. Rye also had the best half dozen fine foliaged plants.

Cut Flowers are always a leading feature at Kingswood. Dr. BUDD, Bath, was 1st with twenty-four varieties of Roses, three blooms of each.

Mr. THOMAS HOBBS, a veteran amateur grower of Bristol, was 1st with twelve varieties, three blooms of each, and though the stand was largely composed of high-coloured varieties, they were fresh and clean. In the amateurs' classes for Roses, Mr. HOBBS was one of the principal prize-winners.

Mr. W. TRESEDER, Cardiff, had the best twenty-four blooms of Dahlias, all good flowers, but the effect of the stand was heightened by the introduction of a few fancy varieties; the leading blooms were Colonist, Earl of Ravensworth, Dr. Keynes, John Ashby, Willie Garratt, Mr. J. Downie, Comedian, Prince Bismarck, John Hickling, &c. Mr. G. HUMPHRIES, Langley, Chippenham, was 2nd. The latter came 1st with twelve fancy Dahlias, having in good character Mr. Saunders, Comedian, Frank Pearce, Dazzler, George Barnes, Lottie Eckford, &c.

The best twelve bunches of single Dahlias were rather large, but even and fresh; the best came from Mr. J. BURGESS. Mr. TRESEDER had the best six bunches of Cactus varieties.

No quilled Asters shown in the West of England have been

yet seen in their best character, owing to the drought. Mr. C. H. VICKERY, Bath, who is a noted Aster grower, had the best twenty-four quilled varieties, and the same number of flat-petalled; Mr. F. HOOPER, Bath, took the 2nd prize, with quilled varieties; and Mr. G. HUMPHRIES with flat-petalled.

Hollyhocks were very good. Mr. W. SMITH, Kingswood, an enthusiastic amateur grower, had the best twelve, some of the varieties so good as to recall the best days of Hollyhock showing. Stands of Phlox Drummondii were very good, and they are fast taking the place of Verbenas in the West of England. There were collections of twelve spikes of herbaceous Phloxes; Mr. W. SMITH was awarded the 1st prize.

Begonias are largely shown as cut blooms in the West, and when large in size and fresh they are decidedly effective. There were good stands of bunches of hardy flowers, and they were shown in bunches, twelve distinct being required. Mr. W. SMITH was 1st, having Senecio pulcher in very fine character; a large, pure white Everlasting Pea, Zauschneria californica, superb; a good Erigeron, Montbretia, Harpalium rigidum, &c.

Fruit.—Some good fruit was staged. The best collection of eight dishes came from Mr. W. Strugnell, gr. to Col. DREXEL, Rood Ashton, Trowbridge. He had Muscat of Alexandria and Madresfield Court Grapes, Sea Eagle Peach, Pine-apple Nectarine, Apricots, &c.; Mr. W. Allen, gr. to W. MARSH, Esq., took the 2nd prize. Grapes were shown in a few classes, also stone fruits. There were some fine culinary Apples, and in the class for dessert fruits, Irish Peach took the lead. Jargonelle was the best dessert Pear.

Vegetables were shown in a great many classes.

Stove and greenhouse cut-flowers were invited in bunches of six, Mr. J. COPER staging some very striking ones.

AYRSHIRE HORTICULTURAL.

AUGUST 25.—The annual show of flowers, fruit, and vegetables in connection with the Ayrshire Horticultural and Agricultural Society was held in Dam Park on the above date.

The entries showed an increase of about 200 as compared with last year, and the quality of the exhibits was high. The specimen plants and the fruit were the features of the exhibition. Amongst the nurserymen represented were Messrs. Cocker & Son, Aberdeen; Kennedy & Co., Dumfries; Fotheringham & King, Dumfries; Mr. Campbell, Blantyre; Messrs. Carnegie & Baxter, Ayr; Imrie & Co., Ayr; Mr. Hugh Dickson, Belfast; Messrs. Thomas Smith & Sons, Stranraer; Thomas Bryden, Ayr; Thomas Imrie & Sons, Ayr; Buick & Sons, Alloa Potteries; A. Lister & Son, Rothsay; and Mr. W. R. Walker, Poundland, Maybole. The arrangements of the Secretary, Mr. Durward, were perfect.

In the open classes, the best collection of six stove or greenhouse plants was from Mr. A. H. Scott, gr. to Mrs. BAIRD, Cambusdoon; 2nd, Mr. M. GANLY, Glendoune. Mr. A. H. SCOTT was also 1st for six table decorative plants.

For a collection of fruit, six distinct dishes, Mr. D. Murray, gr. to the Marquis of AILSA, Culzean Castle, Maybole, was 1st; and Mr. Thos. Gordon, gr. to WALTER NEILSON, Esq., Ewanfield, Ayr, 2nd.

SANDY AND DISTRICT HORTICULTURAL.

AUGUST 15.—The thirtieth annual show was held on the above date, and was a complete success.

Plants.—Mr. J. CYPHER, from Cheltenham, showed ten of his superb plants in flower, and was placed 1st. 2nd, Mr. W. FINCH, Coventry.

Zonal Pelargoniums were shown in good character by Mr. T. LOCKIE, The Gardens, Diddington Hall, Huntingdon, the 1st prize being awarded to him; and plants for table decoration made a good feature.

Groups of plants arranged along one of the tents formed an attractive feature. The schedule states that the groups are not to exceed 50 square feet, but it did seem as if one or two had exceeded that space. Mr. EMPSON, gr. to Mrs. WINGFIELD, Amptill, was a decided 1st in this competition. Orchids, Pitcher-plants, Nerines, &c., were nicely alternated with Palms, brilliant Crotons, &c.; Mrs. AXTELL, Woodbury Hall, was 2nd.

In the amateur's division Mr. EMPSON was the principal prizetaker for plants. He was 1st with six fine-foliaged plants; and Mrs. AXTELL was 2nd. Quite a sensation was created in the class for four Cockscombs by Mr. LOCKIE staging such specimens that the combs measured nearly 18 inches in length from end to end, and they were some 10 inches across. They were marvels of high-class culture, especially as the four matched so well; Mrs. AXTELL was 2nd, her gardener, whose name was not stated, staging some very fine examples also. Other flowering plants comprised Begonias, Balsams, Fuchsias, Pelargoniums.

Cut flowers.—In the "open to all" cut-flower classes a leading feature was the splendid exhibits of twenty-four bunches of herbaceous and bulbous plants. Messrs. HARKNESS & SONS, Bedale and Hitchin, were 1st; and Messrs. LAXTON BROS., Bedford, 2nd. In the amateur's division, smaller but scarcely less interesting bunches were staged.

Roses were good for the date of season. Messrs. HARKNESS & SONS were 1st, with forty-eight blooms, having these in excellent character; and Mr. J. MATTOCK, Headington,

Oxford, 2nd. Mr. MATTOCK, who usually shows excellent Teas at this season of the year, was 1st with eighteen blooms.

Collections of twenty-four spikes of Gladioli were good. Messrs. HARKNESS & SONS taking the 1st prize, with fine examples, including some promising seedlings of their own. Mr. C. BRIGHT, Huntingdon, was 2nd. Messrs. KEYNES & Co., Salisbury, had the best twenty-four blooms of show Dahlias; Mr. JOHN WALKER, Thame, was 2nd; the competition was very close. Messrs. KEYNES & Co. also had the best twelve fancy varieties; Mr. GEO. HUMPHRIES being 2nd. Mr. C. BRIGHT was placed 1st with twelve bunches of Pompon Dahlias, but we greatly preferred Mr. G. HUMPHRIES' smaller flowers, which were placed 2nd.

Some very fine bunches of Cactus Dahlias won for Messrs. KEYNES & Co. the 1st prize for twelve, and they included some highly promising new varieties, such as Wallace, Viscountess Sherbrooke, and Countess of Lonsdale. Keynes' White was in good character, which it is to be hoped it will maintain throughout the season. Mr. C. BRIGHT was 2nd. A delightful stand of twelve bunches of single Dahlias was staged by T. W. GIRDLESTONE, Esq., Sunningdale, as perfect as one could well desire to see them, and the collection contained some of this grower's charming new fancy varieties. Dahlias were shown in the amateurs' division, Mr. R. BURGIN, St. Neots, being the principal prizewinner.

A tent filled with pretty decorations was crowded during the day.

Fruit, &c.—There was not a great deal in the way of fruit. The best collection of eight dishes came from Mr. EMPSON; and Mr. T. LOCKIE had the best six dishes. Hardy fruits were fairly well shown.

There were vegetables in plenty and some of the collections were remarkably good.

Non-competitive Exhibits.—Messrs. CUTAUSH & SON staged a fine group of plants, not for competition, prominent among them being a good flowering plant of Chironia baccifera, now seldom seen. Mr. J. MATTOCK also staged a highly attractive collection of bunches of garden Roses.

SWANSEA HORTICULTURAL.

AUGUST 25.—The second annual exhibition took place on the above date, and was a great success. The entries numbered nearly a thousand, and the quality of the exhibits generally was exceptionally good. The prize schedule this year was considerably increased, about £20 being offered.

Five exhibitors competed for the prize of £10 offered by the Association for the best group of miscellaneous plants covering a space of 200 feet. In the end it was won by Mr. W. FARRANT, Florist, Swansea, who was very closely followed by Miss TALBOT, Penrice Castle (gr., Mr. R. Milner), who was awarded the £5 given by Sir J. D. Llewellyn, M.P.

In the class for six bunches of Grapes (three varieties), Mr. R. MILNER was 1st, having six fine even well-coloured bunches, and Mrs. PICTON, Turberville, Hendrefoilan, was 2nd. Mr. MILNER also won 1st prize for three bunches of Black Hamburg Grapes, showing magnificent bunches of well-coloured berries.

The class for a collection of fruit, eight varieties (distinct), drew several competitors, the 1st prize being won by Mrs. PICTON, Turberville (gr., G. Hawkins); Mr. R. MILNER was 2nd in this class; and Mr. H. PITT, Abergavenny, 3rd.

In the open class for a collection of vegetables, nine varieties (distinct), Mr. H. PITT, Abergavenny, was 1st, and Mr. MILNER 2nd.

The valuable Silver Cup offered by Messrs. PARSONS & Co., seedsmen, Bristol and Swansea, for the best collection of vegetables (eight varieties) was won by Mr. R. MILNER, with a very fine collection.

Messrs. KELWAY & SONS, of Langport, staged a magnificent collection of Gladioli, including several new and meritorious varieties. Other fine trade exhibits were from Messrs. CLIBRAN, Manchester; W. TRESEDER, Cardiff; and JAMES HARRIS, Blackgale, Swansea.

ROYAL HORTICULTURAL OF IRELAND.

AUGUST 26.—The autumn show of flowers and fruit, held under the auspices of the Royal Horticultural Society, was opened on Friday afternoon in Merrion Square, Dublin. The weather was sultry, and rain fell from 3 o'clock, slightly marring the attendance, which, however, was large and fashionable, and was composed principally of ladies. In every respect the show was a success.

The entries exceeded those of last year (which at the time were regarded as a record), and the quality of both fruit and flowers was universally admitted to be exceptionally good. Five large tents accommodated the exhibits, and of these one was set apart entirely for plants, three for cut blooms, and one for fruit. Amongst the cut blooms Begonias constituted the largest and most important class. The collection exhibited by Lord ASHBROOK (gr., Mr. McKeller) was the most attractive, and by amateurs, if not by the more experienced horticulturists, it was regarded as the feature of the show.

In Roses Messrs. ALEXANDER DICKSON & Co., Newtownards, maintained their high standard of merit, the forty-eight blooms, for which they received 1st prize, being undoubtedly very fine. In addition to awarding Messrs. Dickson the prize, the judges recommended their collection for the Certificate of the Council, which is in itself a special mark of merit.

The Messrs. MCGREADY & SONS, Portadown, were among the successful exhibitors in Begonias, having been awarded the Silver Medal and other prizes in this class. Carnations were well represented, and a pretty and effective display they made. Mr. FORBES, of Hawick, carried off the Silver Medal for his collection, which certainly deserved the judges' fiat.

Messrs. RICHARD HARTLAND & SONS, Lough Nurseries, Cork, were strong in Begonias, and, as might have been anticipated from their high reputation in the past they secured a large proportion of the prizes. Their Lady Ashbrook, Lord Ashbrook, and H. R. O'Kearney varieties won the Gold Medal at Shrewsbury show last week, and were much admired by judges and visitors here. In plants, the fine group sent in by Mr. MOORE, of the Botanic Gardens, Glasnevin, for exhibition, but not for competition, frequently drew from visitors observations expressive of unqualified admiration. Messrs. RAMSAY & SON, of Ball's Bridge Nurseries, also staged some remarkably fine specimens of plants. The cut blooms, embracing Dahlias, Roses, Gladioli, Begonias, and Asters, made a brilliant display of beautiful colours. The show of fruit, as already indicated, was excellent. There were eighty-two bunches of Grapes exhibited, and they presented an appropriate background to the Peaches, Nectarines, and Figs which were placed on plates on the front of the stage. There was a small but creditable show of vegetables.

A pleasing feature of the show was the number of new exhibitors who entered this year. This speaks well for the prospects of the society, whose friends seem to be annually increasing. In connection with the judging, a slight but important innovation has been made. For the first time in the history of the society a lady judge has been appointed—Miss CURRY, of Lismore, county Waterford—who discharged her duties with unqualified satisfaction. In the afternoon their Excellencies the Lord Lieutenant and Countess Cadogan, accompanied by a distinguished company, visited the show. The band of the 1st King's Dragoon Guards supplied the music during the afternoon, and played the National Anthem on the arrival and departure of the Viceregal party. The following were the judges: Plants—Messrs. P. J. Gray, A. Morton, and P. Brock. Cut Blooms—Miss CURRY (Lismore), Mr. W. E. Gumbleton, and Mr. A. Black. Fruit—Messrs. Charles R. Hamilton, P. Gray, and F. Bedford.

HORTICULTURE IN NEW SOUTH WALES.

PERHAPS no portion of the world (observes an experienced writer) of the same area is better favoured than New South Wales, with its varied climates and soils, for the production of fruits, vegetables, and flowers. It is really surprising how great a variety can be grown to perfection, and at a minimum expenditure of labour. Exotics from cold, temperate, and even tropical countries, thrive equally well within the limits of this comparatively small area; and still more remarkable is the fact that so many of these plants from different climates will grow side by side in many favoured localities. With all these advantages, it seems strange that comparatively little attention should be devoted to the raising of vegetables for home use, or to the cultivation of flowering and ornamental plants for the adornment of the homes of the settlers in the country districts. Occasionally one may meet with a well-cared-for beautiful garden, like an oasis in the wilderness; but, as a rule, few attempts are made even to grow the commonest vegetables for family requirements, and dependence for supplies is placed on Chinese gardeners, whose gardens are generally to be found dotted about the country, especially in the more thickly populated districts. The raising of vegetables, the selling of fruit, and the hawking of goods, would seem to be almost entirely in the hands of the Chinaman, the Italian, the Syrian, and the Indian, despite the fact that a considerable proportion of the white colonial population consists of unemployed men tramping through the country in search of work, and dependent upon the hospitality of the settlers. Considering the little difficulty there is, in most seasons, in producing a sufficiency of fruits and vegetables for a family's requirements in most parts of the colony, it is incomprehensible that the settlers or farmers do not grow everything they need. Instances have been known where vegetables were brought hundreds of miles to localities in which the same kinds of vegetable could be grown to perfection with but little trouble. In some places Chinamen will travel from 40 to 50 miles carting vegetables to settlers who have soil sufficiently rich to grow all they need, if they took the trouble to devote but an hour or two each day to

the work. In the neighbourhood of Sydney, flower-gardening has been made a remunerative occupation by reason of the growing demand for bouquets, wreaths, and floral ornaments, but the continual expansion of the metropolitan suburbs is driving the older nurseries further afield.

A considerable business is done by nurserymen and florists in Palms of various kinds, especially that known as *Kentia Belmoreana*, which is indigenous to Lord Howe's Island, and succeeds admirably in gardens about Sydney, and when planted with Tree-Ferns grows freely and quickly, and is wonderfully effective.

The "bush-house" is one of the most useful of structures in connection with the garden in all the warm parts of New South Wales. In it a multitude of plants can be grown which would be liable to perish in the hot sun. It can be, and is, constructed of all sorts of material, sometimes Tea-tree brush, laths, Bamboo blinds, and, indeed, anything that will break the rays of the sun without altogether obstructing them. In numerous gardens about the metropolis and large towns there are glass buildings where tender exotics of climates warmer than that of New South Wales are grown as successfully as in any part of the world.

Everything indicates that the colonial taste for floriculture is improving rapidly, and will continue to improve, a result due in some measure to the fact that there are many excellent gardeners, professional and amateur, in the colony. A large proportion of the Potatoes and other vegetables consumed in New South Wales is imported from Victoria, where market-gardening is more largely in the hands of white men than in the older colony. The vegetable products of Chinese gardens are mostly of poor quality, insipid and watery, owing to the methods of over-watering and over-manuring adopted. Although these vegetables are of such inferior character, they are absolute blessings in many places where the colonists either will not or cannot grow those they need. Vegetables of excellent quality can be produced, even in dry districts, with but little irrigation, if they be properly managed; but unless a Chinaman has a superabundance of water he is lost. With a fair supply of water and experienced labour, almost every description of vegetable known in Europe or America can be grown with ease, generally yielding abundant crops. *John Plummer, Sydney, New South Wales.*

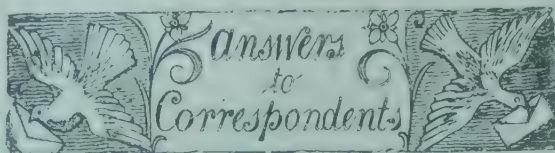
Obituary.

DEATH OF AN OLD GARDENER.—The death is announced of Mr. JOHN KNIGHT who retired in 1887 from the superintendence of the private gardens at Hampton Court Palace, to which he was appointed in 1861. More than seventy years ago Mr. Knight was foreman of the Pleasure Grounds at Frogmore, and later he was for many years gardener to the late Duchess of Kent.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

TOMATOS.—A correspondent, "C. J. P.," living near Bristol, writes, in the hope of some of our correspondents who may see this note, answering the following questions: "I grow a good many Tomatos, in unheated houses, and have one heated house for bringing on the young plants. When the young plants were turned out we kept a dozen plants in 10-inch pots in the hot-house to come on early. Afterwards, we filled the house with Melons. As the Melons came on I determined to sacrifice what was left of the Tomatos for the sake of the Melons. So the ventilation was reduced, considerable heat maintained, with an atmosphere more or less moist and stagnant. Now according to all rules the Tomatos ought to have promptly become diseased, and gone off in different ways. But as a matter of fact they are doing remarkably well, and not a spot or a speck is visible on the leaves. How is this to be explained?"



BOOKS: *G. W. G.* So far as we know of, there is no recent work on table decorations, and Miss Annie Hassard's manual is long since out of print, as well as being old-fashioned in method and material. Ask Mr. Upcott Gill, 170, Strand, W.C.

CHRYSANTHEMUM LEAVES WITH FUNGUS: *B. W.* The leaf is badly affected with a "rust" fungus, which you may find fully described by turning to *Gardeners' Chronicle*, October 9, 1897, p. 256. If but few of the plants are affected your wisest course will be to burn those, and should any further plants show signs of the "rust," remove the leaves affected as soon as they be observed and burn them. It might be useful to syringe all the plants with Condy's Fluid or a copper solution, especially wetting the underneath side of the foliage.

CORRECTION.—Page 158 in previous issue, col. 3, top line, for *Filacea* read *Placea*.

CUCUMBERS WITH FUNGUS: *R. F.* Syringe the plants with a solution of sulphide of potassium, mixing about $\frac{1}{2}$ -oz. to each gallon of water.

FUNGUS: *X. Y. Z.* *Polyporus sulfureus.* *M. C. Cooke.*

GARDENER AT AN INSTITUTION: *W. P.* You have been very hardly treated, and according to your showing, for a very trifling offence. You should certainly sue the superintendent or the chairman of the Committee for three weeks' wages, and four weeks in lieu of proper notice to leave the service. If you have house, coal, &c., in addition, sue for these likewise.

GRAPES: *G. S.* Your Grapes are mostly split and covered with mould. If these be a sample of the crop, no means can now be taken to render the fruit valuable. You had best cut the fruit, and thus relieve the Vines of the worthless produce. In the winter cut the canes well back; thoroughly cleanse them with a fungicide, and examine the border. Probably you will find it badly drained. If ordinary mildew shows itself next season, apply a little sulphur to the leaves as soon as it be noticed.

INSECTS: *J. W. C.* The mites sent are a species of *Bryobia*, I think *nobilis* or *pratensis*, Koch, if these two species be really distinct, which I doubt; but the species of *Bryobia* are not well settled. It is related to, but by no means identical with, the common so-called "red-spider" of our greenhouses, &c. *Bryobia* swarms in gardens, and infests numerous plants; it is often very abundant on the Gooseberry; but, as far as my observations go, it is generally found in the greatest numbers on Ivy; if there be any Ivy near the windows they probably might be beaten off it in thousands. I scarcely think that they are likely to be on the Clover, but it is difficult to say what plant they will not get upon. It will, I fear, be a troublesome matter to get rid of them; probably by beating the plants infested with them over a vessel of hot water, and then syringing the plants with paraffin emulsion or quassia-wood solution, something might be done—but it would probably be rather a serious undertaking, on account of the extent of vegetation they generally spread over, and the necessity of getting at the under-surfaces of the leaves. They are not destructive inside a house, and unless you are very much annoyed by them, you may perhaps be wise in letting them alone. *Albert D. Michak.*—*Mrs. S., Cheltenham.* Your Pear-trees are attacked by the slug-worm of the Pear and Cherry saw-fly (*Selandria atra*). Among the remedies recommended is that of dusting some dry quicklime or gas-lime over the caterpillars. By exudation they will be able to throw this off the first time, but if a second application be made it will kill them. Syringe the trees powerfully with strong soap-suds or tobacco-water. By trying these and similar remedies you will no doubt minimise the mischief they will make.

MAGGOTS IN MUSHROOMS, WOODLICE, &c.: *Coventry.* The mischief will disappear as the season advances, little or no harm from this cause occurring in the winter and spring. We should advise the clearing out of all affected Mushroom, and keeping the house or cellar at a maximum temperature of 60°. Vaporising the place with Richards' XL All Compound would clear off the flies that are the cause of the mis-

chief. Good Mushrooms cannot be grown in a vinery at this season, although a crop might be obtained when a vinery is started in winter. Woodlice gnaw the Mushrooms, and do much damage if they are numerous. Try pouring boiling water into the cracks between the beds and the walls and sides, and leave nothing about under which they can hide. If your beds have a covering of hay or damp litter, clear this out and burn, as it forms just the sort of resort for the marauders that they prefer. If the beds are dry, afford them an application of warm water with a table spoonful of salt to 3 gallons of it. Keep the air humid by damping-down; this will prevent the drying of the beds.

NAMES OF FRUIT: *A. C.* Golden Champion, probably; send leaves. It is rather difficult to manage, and uncertain.—*C. R.* Apple Irish Peach.—*A. J.* Plums: 1, Gisborne's; 2, Jefferson; 3, Michelson's; 4, Kirke's.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*G. F. B.* *Erysimum Perofskyanum.*—*K. W. G.* 1, *Lythrum Salicaria*; 2, *Epilobium hirsutum*; 5, we do not recognise it, and it arrived in too rotten a state to admit of dissection.—*W. T., Barnet.* 1, *Adiantum capillus-veneris*; 2, *Gongora galeata*; 3, *Pteris quadri-aurita*; 4, *P. longifolia*; 5, *Blechnum corcovadense*; 6, *Doryopteris palmata*; 7, *Dracena (Cordylina) australis*; 8, *Carex japonica.*—*No Name:* *Woodbox—French.* 1, *Dendrobium formosum giganteum*—very good; 2, *Selaginella caesia*; 3, *S. apoda*; 4, *Begonia Prince Wallenstein*; 5, send specimen in flower; 6, *Stenotaphrum americanum variegatum.*—*No name: in Lady's Belt-box.* 1, *Asplenium lucidum*; 2, *Polypodium sub-auriculatum*; 3, *Gesnera elongata*; 4, *Asplenium bulbiferum*; 5, *Lathyrus cyaneus*; 6, send in flower (probably *Weigela*); 7, *Rhus Cotinus.*—*C. B. C.* *Ononis arvensis.*—*E. R.* 1, *Rhus Cotinus*, Wig-tree; 2, *Agrostemma coronaria.*—*J. B., Wilts.* *Odontoglossum crispum*; rather pretty, but not out of the common run.—*C. S. B. (Conifers).* 1, *Cupressus Lawsoniana*; 2, *Thuja orientalis*; 3, *Cupressus nootkatensis*; 4, *Thuja occidentalis.*—*H. M. L. (Green Rose).* The so-called *Rosa viridiflora.*—*W. S.* *Bignonia radicans.*—*Z. North.* *Impatiens glandulifera.*—*A. B.* *Lycium barbarum*, sometimes called the "Tea" plant.—*J. Sparrow.* 1, next week; 2, *Rhus Cotinus*; 3, *Datura Stramonium.*—*Cydonia.* 1, Shirley Poppy; 2, *Clematis flammula*; 3, a mere scrap, send in flower.

PASSIFLORA FRUITS: *W. T., Radyr.* The variety you send is *P. edulis*, and your crop in a cool-house of one half bushel of fruits is a good one. They may certainly be used for dessert purposes, but whether they may prove palatable to you or not we cannot say. Only the pulp is eatable, and it has a mild orange-like flavour. To ourselves it is by no means ungrateful.

ROYAL HORTICULTURAL SOCIETY: *A. C.* The office of the Society is at 117, Victoria Street, Westminster, S.W. Address the Secretary, Rev. W. Wilks.

THE KIND OF HOUSE BEST SUITED FOR RAISING FERNS FROM SPORES: *E. J. S. & Co.* A lean-to, or hip-roofed house, facing north, sunk a couple of feet in the earth, and fitted with a heating apparatus equal to maintaining a temperature of 60° to 70°. The glass of the roof may consist of rough plate.

THE PLUM: *C. W. H.* The ideal soil would be a heavy loam overlying limestone, chalk, or greensand. Failing these formations, almost any kind of soil not a sandy thin peat can, by means of a suitable admixture of pasture-loam, mortar-rubble, quicklime, superphosphate of lime, and potash, be made to carry healthy Plum-trees, from which crops, more or less plentiful, according to the weather in the flowering season, may be obtained.

TOMATOS: *Potter's Bar.* The fruits are affected by a fungus, *Cladosporium lycopersici*. Cut off all affected fruits, and burn forthwith, and spray the plants with liver-of-sulphur at the rate of half an ounce to one gallon of water. Avoid spraying ripening fruits.

COMMUNICATIONS RECEIVED.—John Prince.—W. E. Gumbleton.—Mariano Ricci.—H. W. W.—J. B.—J. S.—W. B.—J. C.—M. J. S.—D. T. F.—T. B.—Dr. H. R.—W. Faulkner (thanks for cutting sent).—A. B. & Co.—O. F., Lehenhof.—T. C.—J. B., Abbotsbury.—E. C.—J. C.—G. B.—A. H. H.—M. T. M.—D. & W. B.—W. T.—W. G.—E. S.—Angioli Pucci.—W. Swan.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—W. Swan.

(For Markets and Weather, see p. viii.)



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 10, 1898.

BOUTCHER'S "TREATISE ON FOREST TREES."

THE above-named treatise, very popular at one time, and well known to earlier generations of gardeners, was published in 1775, a second edition appearing in 1778, and the author was one of Philip Miller's old pupils, who had settled near Edinburgh as a nurseryman. The nursery was not far distant from Holyrood, the exact locality being known as Comely Gardens, built over long ago, and close to which the Waverley and East Coast lines to the South now pass. Boutcher's success in business, it would appear, was not equal to his expectations, and at least one reason for launching his book was, that he might be well remunerated by its sale. We may conclude his expectations were to a large extent realised, because at least 500 copies were sold to subscribers; and the remainder, as the date of the issue of a second edition shows, was not long left on his hands. John Murray the First was his London publisher.

Like Switzer's *Ichnographia Rustica* of the early part of the same century, the book is peculiarly interesting on account of the glimpses it incidentally reveals of matters connected with gardening at the period it was written. For example, we find the wage paid to the British gardener ranged from £20 to £40 a year; but another sentence leads us to infer the usual wage to have been from £15 to £20, and the first-named amounts to have been secured only under uncommonly favourable circumstances. This, however, was an increase on fifty years earlier, because Batly Langley, in 1728, names £15 as a gardener's remuneration for the twelvemonth.

In 1766, the third edition of the *Scots' Gardener* names 1s. per diem as the wage of a labourer, and a gardener must have been better paid than appears from the above-quoted figures. For one thing he had "House and Eldin" (fuel); also a bit of ground on which to grow Flax and vegetables; also a cow—or, rather, feed for a cow; and in some instances it would appear that he made for himself a little out of the sale of surplus produce. Scott refers to this very old custom in *Rob Roy*, where the sagacious Andrew Fairservice mentions having been "doun about a wee bit business o' my ain wi' Mattie Simpson, that wants a forpit or twa o' Peers that will never be missed in the Ha'-house."

The gardener of 1775, moreover, occupied a position, and had a larger degree of responsibility than his successor of 1898. This is apparent from the advice Boutcher proffers to "men of plentiful fortunes" to provide "two gardeners," the one to have the charge of the gardens proper; the other to manage the woods. Nor are we allowed to suppose that Scotland

is alone referred to, for we are informed he had "visited with attention many of the most elegant and magnificent seats in Great Britain, but never once in my life have seen all the different branches of the business properly executed under the management of one man."

In another part of the book the great scarcity of hardy fruit in Scotland, and the exorbitant prices it brought, is mentioned, and the curious reason he proposes to account for this, was the "new fashion" of laying-out lawns round the house, with the consequent removal of the kitchen and fruit gardens to another site at a distance. The style of landscape gardening just alluded to was introduced into Scotland between 1750 and 1760, about which time many extensive policies were laid out, new kitchen gardens formed, and fields, formerly cultivated, laid down in grass parks. However, judging from the many references to "wilderness quarters" which occur throughout the book, there still must have remained in 1775 many estates in which the garden, with its fruit-trees and its narrow flower-borders, and the wilderness, replete with Roses, shrubs, semi-wild plants, tall perennials, and the more rare trees lay nestling close to the sheltering walls of the "big" house.

Our progress through Boutcher is not great before discovering that the goose-quill he wielded was in its nature largely caustic. Among other practices condemned in language best indicated by this word was that of supplying trees untrue to name, and more particularly fruit trees, which, if we credit the writer's statement, was habitually done in his day. Another of the customs he attacked with uncompromising hostility was the practice of sowing the seeds of Firs very thickly, and selling the seedlings direct from the seed-bed. This method was first pursued about sixty years previously by the Earl of Haddington, and the results were so splendidly successful that, as appears from Boutcher's declaration, it was then usual to purchase two-year-old seedlings, bring them a distance, and plant them in permanent situations, with the not unnatural consequence of losing nearly the whole of a consignment. The great pioneer of Scotch forestry raised his own seedlings, "puddled" their roots when lifted, and had them planted at once in sandy soil—little matters that nurserymen seem to have ignored altogether.

Another distressful custom was that pursued by some nurserymen of issuing lists of trees and nursery stuff with prices attached. Intending purchasers are warned to beware of these men, who, he cannot help insinuating, must be possessed of a bias towards dishonesty. None of these lists are likely to exist now, but the *Edinburgh Courant* for February 4, 1767, contains an advertisement of shrubs which are priced in hundred lots, or "classes," as the advertiser calls them. Prices are very low—e.g., class 1, 40 varieties, at 10s. per 100; class 2, 60 vars., at £1 per 100; class 3, consisting of above 100, at £1 10s.; class 4, of 50 vars., at £2 10s.; and class 5, of 50 vars., at £5 per 100. The list, with the names of the shrubs in the several classes, was kept by the vendor; those in the last-named being so rare that not more than two of one sort could be selected of classes two, three, and four. An "N.B." states, of the five classes of shrubs no more than five score are given for the hundred.

That Boutcher practised what he wrote is proved from an advertisement of his own in the same paper, but ten years later than the above, or on Feb. 10, 1777. It may be worth

extracting in extenso, as it is not very lengthy:—

"To be sold by William Boutcher, nurseryman at Comely Gardens, a collection of all the valuable kinds of fruit and forest-trees, flowering shrubs, evergreens, and hedge plants, cultivated after the manner directed in his late *Treatise on Forest Trees*.

"There are, particularly, considerable numbers of the following sorts:—English Elm, grafted on Scots and Dutch stocks; ditto on their own bottom, from four to eight feet high; Scots Elm, same size; Limes do.; Beech, from one to four feet high; Balsam and Berry-bearing Poplar, from three to six feet high; Lombardy do., same sizes; Planes, from two to eight feet; Horse-Chestnut, from three to six feet; Laburnums, same sizes; a large quantity of two-year seedling Hollies; ditto, two years transplanted; Yews, one and two feet; Thorns, from two to seven years old, transplanted; Scots Fir, three and four years old; Spruce Firs, from six inches to two feet Silver Firs, same sizes.

"All the finest kinds of Roses known in Europe, with a numerous and elegant assortment of the other flowering shrubs, deciduous and evergreen.

"P.S.—The Scots Fir, Thorns, Plane trees, and Lombardy Poplars, which are plants of the best quality, will be sold below the usual rate."

How interesting it would have been to us now had Boutcher been inconsistent for only that once, and appended prices to his goods! That he possessed an efficient knowledge of his business the pages of his book abundantly testify. He advocated growing trees to a large size in the nursery, and then transplanting them to their permanent positions. The treatment recommended is so practical, that one can have no hesitation in accepting his assurance that if intelligently pursued, trees up to 24 feet in height, "with large bulks of soil," may be carried any distance and transplanted with safety. For estate work, nothing indeed could be more suitable; but for a nurseryman, it is impossible to see how he could make it pay. As showing the extreme lengths to which he carried his pet views, he actually proposed a method of growing the common Whitethorn for hedging purposes to a height of 6 feet in the nursery, meanwhile keeping the plants trimmed to shape, and finally transferring the full-grown hedge to its position. Regarding the trimming of thorn hedges, his advice is in line with the method pursued at the present day, of cutting them tapering from base to apex. Strange as it may appear to us now, he proposed this as an improvement on the practice common at that time of fashioning thorn hedges with a broadened flat top, and sides inclining inwards to the bottom. A few Thorns, on account of their beauty, are commended for the park and wilderness, and he takes care to say they are to be left to grow in unrestricted freedom.

He, however, considered the common Holly as unsurpassed for a hedge. His method of preparing Hollies for this purpose is original, perhaps unique. Two-year-old seedlings were selected from the seed-bed, and planted in lines 3 feet apart, and half that space in the lines; the soil to be fertile. Here they were to remain till the third spring after planting, at which time a trench was cast out, and all the roots shortened. The year following the plants were cut down, and the next they were in a fit condition to plant. The best time to plant was April, when they were lifted with "bulks of earth about their roots," and set in the line of the hedge at 18 inches apart. The crop of young shoots, the result of cutting over, were trimmed level at the same time. He notices "a very wrong, though prevailing custom, which is clipping the beginning of winter," and instead recommends hedges to be trimmed in July.

The Tynninghame hedges are mentioned as illustrating "the incomparable beauty, lasting strength, and magnificence of Holly hedges." For the long period of 140 years or more, these remarks of Boutcher's were at any time applicable. In 1775 they were, however, "not lofty in proportion to their thickness and strength," and he recommends they should be "run up to 25 or 30 feet in height, cut thinner and thinner as they approach the top, which in a few years would make them the most glorious sight of the kind that can be conceived." The advice was not accepted, nor did the Hollies lose their glory.

Of trees, a list, fairly full without being exhaustive, is treated in detail. The writer gives common names only, because "their botanical characters being universally known to the learned, and of no use to the young and illiterate gardener, &c., &c." It is possible there was another reason, because, after treating of Poplars in one chapter, he, in a later one, describes the "Tacamahacca" tree as of a distinct genera, and "good for wildernesses."

The chapter on Oaks contains the curious information that it was the common practice not to plant young Oaks with a spade, but to dibble them into the ground, like Cabbages. He very properly condemns this custom. He advises cutting with a sharpened spade the roots of one-year-old seedling Oaks and Beeches in the same manner. Two-year-old trees of the former that are "crooked or bushy, must be cut over by the ground and remain two years longer." One shoot to each was of course all that was allowed to remain. Cutting off large limbs of old trees is condemned, and the pair of Cedars of Lebanon cut back by Miller from off the greenhouse at the Chelsea Physic-gardens, are held up as warning examples. Pruning in itself he has nothing to say against, and as a matter of fact, pruning when young formed part of his management of trees.

In a lengthy argument, the employment of Planes and Poplars instead of Firs as nurse-plants is proposed.

In a postscript the author conditionally promises a *Treatise on the Culture of Hardy Fruits*. The manuscript was in his possession, but so far as I know of, it never took the book form. A method of cultivation was to be revealed by means of which as good hardy fruit would be produced in Scotland as was then grown about London, while London in this respect would be on an equality with Paris.

We have no reason for supposing that hardy fruits were less well cultivated at that period than at present. Here, for instance, there is a Ribston Pippin Apple-tree planted in 1759 which bears the marks of having been treated well in its younger days. Forsyth in 1803 published a list of Scottish Pears, some of which are still esteemed highly, and altogether we have no reason to think that the people a century ago lost much by the nonappearance of Boutcher on *Fruit-trees*. R. P. Brotherston.

NEW OR NOTEWORTHY PLANTS.

HYACINTHUS AZUREUS VAR. GIGANTEUS, *Baker.*

This gigantic variety of *Hyacinthus azureus* was found by Mr. Siehe on the Mount Muris, in Northern Cilicia, at 1000 mètres above sea-level. It attains a height of 30 cm., or almost 1 foot. The flowers are of a delightful shade of azure-blue, and very fragrant. The plant grows in moist soil, and in swampy ground, and needs therefore, when grown in gardens, very much water at the root when in active growth. It

flowers at the end of the month of March. At the left side of our illustration (fig. 52, p. 191), taken from a photograph of the plant by Mr. Siehe in its natural locality, there is a specimen of *Muscari botryoides*, which shows the difference in the size of the two species.

ORCHID NOTES AND GLEANINGS.

CIRRHÆA VIRIDI-PURPUREA.

THE plant, of which I send a photograph, has been grown among a mixed collection of Orchids in a plant stove in these gardens for a period of about nine months of the year. The remaining three months it is rested in a cooler house. It commences to grow about April, and when the young growths are about 3 inches long, it begins to show its flower spikes, the latter, as a rule, being fully developed about the middle of July, but the pseudo-bulb continues to grow till late in the autumn, when water is gradually withheld, but not entirely dispensed with till nearly the end of the year.

When in full growth the plant likes abundance of water, but great care must be exercised in affording it when the young growths first appear, as any excess at that time causes them to damp off.

In the growing season the usual stove temperature suits it, and when at rest a temperature of about 45° to 50°, but it should not be kept dry enough to cause the pseudo-bulbs to shrivel. *Ed. Wrighton, Garthynghaved, Dolgelly.* [The plant had sixty-eight blooms on six spikes, but unfortunately the photograph was unsuited for reproduction. *Ed.*]

TREES AND SHRUBS.

THE PLANE.

PLATANUS orientalis has long been cultivated in this country as a decorative tree, having been introduced from the Levant about the middle of the sixteenth century. This species and its variety, *P. acerifolia*, are the most common in cultivation, the latter variety, probably known to many as the London Plane, having been extensively planted in the parks and streets of the metropolis.

P. orientalis variegata is another variegated form with silvery leaves, but is not nearly so fine in effect as the former variety; it is, however, useful and ornamental.

P. orientalis laciniata is well worth growing for decorative effect, on account of its very deep and much-divided leaves; these are deep green in colour; and its growth is vigorous and free. The tree varies in height from 50 to 60 feet. This was introduced about the year 1815, but its origin is unknown.

P. orientalis cuneata is distinct in general appearance from all others. It is dwarfer in habit, scarcely ever exceeding 20 feet in height. The leaves are dentate, wedge-shaped at the base, and smaller than those of the type, also glabrous. There are but few trees of this variety in cultivation, and it is not nearly so fine in effect as the others. It was introduced from the Levant in 1739.

P. orientalis hispanica.—This is the Spanish form of the type, and differs but slightly from the species in having longer leaves. It is frequently seen in private gardens and nurseries under the name of *P. macrophylla*.

Of the lesser-known varieties there are several that have very handsome and ornamental foliage.

Chief among this latter class is the variety *P. Luttneri*, recently introduced, and which, when better known, will be appreciated as very valuable. It is distinct both in habit and growth, being upright and compact, but it is in the striking beauty of its leaves that its value consists. The leaves are palmate in shape, five-lobed, and deeply cut or serrated along the margins, and in colour are creamy-white, more or less splashed or streaked with green. Its variegation is constant from the development to the fall of the leaf. A specimen tree I noticed recently about 20 feet high, with a stem girth of 18 inches, created a fine effect, the striking foliage being visible for a consider-

able distance. [Some leaves and shoots kindly sent by our correspondent, bear out his description fully. *Ed.*]

All the Planes delight in a free, moist, loamy soil, but will not succeed in heavy clay, nor in an elevated or exposed situation. They may be increased by seeds, layers, or cuttings. *E. S., Woking.*

BICTON.

(Concluded from p. 178.)

LEAVING the arboretum and entering the kitchen garden, the nursery plot is remarked, a handy piece of ground for the rearing of out-of-door plants. And here were specimens of Turner's Crimson Rambler Rose in full bloom, one plant carrying no fewer than 700 clusters—a glorious picture. The old growths of last year were pegged down to the soil, and the new shoots loosely tied to stakes, so that now the whole forms a dense mass. A couple of Oaks are at this spot, each measuring exactly 13 feet in circumference.

THE KITCHEN GARDEN.

The kitchen garden is undoubtedly one of the finest in the country, and it is managed in an intelligent manner. Capital trees of the Plum, Peach, Pear, &c., furnish the walls, with pyramids and espaliers on the quarters, and with others of vase-like shape, having short stems. The crop of Plums on trees of Washington, Early Orleans, Czar, Pond's Seedling, Rivers' Prolific, Victoria, Magnum Bonum, Green July and Transparent Gages was a very good one. The Cherry-trees had likewise borne good crops. Fruits of the Moorpark and Kaisha Apricots then ripening were very fine. The Peach-trees on the east wall were not very well cropped; but the crop on the south wall was a very heavy one.

The two Peach-houses here are each 80 feet long, unheated, and filled with capital trees, one house being that already mentioned. The varieties Royal George, Sea Eagle, Crimson Galande Peaches, and Violette Hâtive Nectarines were capital; and the other house was furnished with trees of Goshawk, Dymond, Violette Hâtive and Grosse Mignonne Peaches, and Violette Hâtive Nectarines, with large Cherry-trees on the back wall. A Fig-house 75 feet long and 15 feet wide, divides these two peacheries. The Figs are planted at the back, and trained downwards to the front, and the trellis being rather low makes it an easy matter to gather the fruit and manipulate the shoots. The whole of the surface of the border is paved with cobble stones, and this hard border seems to suit the trees, as a grand crop of Brown Turkey was ripening. Against the front, plants of the Early Ruby Tomato were planted.

In the vegetable quarters, Carrots, Onions, Peas, and Beans showed splendid crops; Currants were abundant, and Raspberries a heavy crop. Mr. Mayne prefers Raspberry Superlative to any other he has tried. The Strawberries were over, but I perceived that Royal Sovereign, Sir Joseph Paxton, and President furnished the main supplies; although Leader and Monarch were grown and gave satisfaction. Early Potatoes were very fine, and a heavy crop. To describe pits, frames, &c., would take too much space, and it must suffice for me to say that this part of the garden was extensive and very interesting.

We passed a large Tulip-tree in flower on the way to the orangery. In this large building specimens were noted of *Luculia Pinceana*, and *L. gratissima*, which will be glorious later on; large plants of *Bougainvillea glabra*, of *Datura arborea*, and climbers on columns and roof, such as *Bignonia*s, *Lapageria*s, *Passiflora*s, *Cassia corymbosa*, *Jasminum azoricum*, white flowers, very fragrant; *Habrothamnus*, *Acacia*, and *Trachelospermum* were remarked.

Passing away down the wide lawn, we leave a lake of some 5 acres in extent, beautifully embosomed amidst grand trees, under the shade of which a capital boat-house is erected; and two islands afford variety, as do a number of black swans and other exotic aquatic birds.

Before closing my notes, I must bear testimony to the kindness of Mr. Mayne, and express a hope that he will for many years to come remain in charge of

these notable gardens, and that the happy relations existing between master and man will continue.
W. Swan, Exmouth.

HIPPEASTRUMS AS BEDDING PLANTS.

WHERE Hippeastrums are raised in numbers from seed every year, a novelty in bedding can be obtained by planting those bulbs the form of whose flowers falls short of the hybridist's standard of excellence, but which are good enough to make a show out-of-doors; they would look exceedingly well as occasional plants in a mixed border with other bulbs, such as *Lycoris*,

retarding or bringing forward those that incline to flower outside at that period, a race of *Hippeastrums* could be obtained of great value for bedding purposes.

Some bulbs of *H. vittatum* which were left out all the winter, buried 3 inches below the surface to protect them from severe frosts, were very late in starting into growth, and have made but little progress as yet; they can hardly be expected to flower before October or November, with a possibility of being cut down by an early frost. This tends to show the necessity of starting them into growth early in the year if they are to flower at a suitable season. Although they would fall short of the characteristics

rect name, *E. pulverulenta*, implies, the plants have a powdery appearance, and under the influence of this year's tropical sun-heat this characteristic is more than usually developed. *E. cordata* branches freely, and frequently quite horizontally, forming a perfect pyramid. At Finsbury Park, Mr. Melville has used this species with good effect in some beds of tuberous-rooted *Begonias*, the luxuriant foliage and brightly-coloured flowers affording evidence of the grateful shade furnished by the taller plants. In common with most of the members of the genus, this species is a quick grower, and plants raised from seed sown in the early spring attain a height of quite 3 feet during the course of the summer. When the season is over, these plants should be thrown away, and new ones raised for the following summer, as lifted plants rarely recover from the check due to transplanting. In order to properly develop the plants, they should be planted 3 feet apart, and as the apex is pendulous in nature, a neat stake should be given to each. When large plants are required, seed should be sown in the autumn, and the plants kept gently growing throughout the winter. As a pot-plant, it is a great acquisition in the cool or warm greenhouse. Seed, which germinates freely, should be sown thinly in a well-drained compost of light sandy soil. After the plants have passed the seedling stage, they grow freely in almost any kind of soil. A. C. B.

TEMPLE HOUSE, GREAT MARLOW.

THE riverside residence of General and Mrs. Owen Williams is charmingly situated a few yards distant from the "Royal River," on the Berkshire side, a couple of miles from the above-mentioned town, and in the midst of beautiful scenery on either side. The mansion itself is of considerable size and importance, and stands in pleasure-grounds admirably laid out and of large area, the estate being one of the largest in this district. My visit recently was made chiefly with a view to an inspection of the large collection of *Malmaison* Carnations grown here, and which I had seen in a young state, and noted that they were remarkably healthy and promising. Mr. Groves, the able gardener, has more than a local reputation for his culture of this now popular variety of *Carnation*, and the quality of the flowers I saw on this occasion fully confirms all I had previously heard on this point. At the time of my visit there were some 2000 blooms, the majority fully open, and others in course of development, which made an imposing sight, vieing both in size and colour with those staged at the Royal Horticultural Society's meetings and the Temple Show. About one hundred of the plants were two years old, but the most of them one year from the layer. Mr. Groves does not believe in keeping his plants after the second year, at which age they are layered, and about 100 of the first year's flowering-plants are potted-on each season for the second year, as these produce their blooms somewhat earlier than the young plants. Large pots are not used, although Mr. Groves favours the one-shift system, and his layers, being always strong, are potted direct into their flowering-pots, which are 7-inch size, and the two-year plants are given 10-inch pots. The loam used for the potting is subjected to heat for the destruction of wireworm and grubs.

During dull weather, and especially throughout the winter months, the atmosphere of the house is kept particularly dry, and little water used, any spilled being dried up as soon as possible, and the plants are never wetted overhead. Should any attack of rust appear, the foliage is rubbed with flowers-of-sulphur held between the thumb and finger, and this simple remedy has been found very effectual.

The pink variety is chiefly grown with a few of the blush-white ones, and most of the newer varieties are given a trial. Of these I noticed Mrs. Everard Hambro, Churchwarden, Sir Charles Freemantle, Prime Minister, and Princess May. A slight shade is afforded by coating the glass with whiting properly prepared, so that it does not wash off, just sufficient being applied to break the strong rays of



FIG. 52.—HYACINTHUS AZUREUS (BAKER) VAR. GIGANTEUS:
COLOUR OF FLOWERS AZURE-BLUE. (SEE P. 190.)
(Half natural size.)

Amaryllis, *Calochortus*, &c., or planted closely together in a bed by themselves. I have a number of bulbs which were weeded out from the collection in the spring, planted in an open, sunny border with seedling *Begonias* as a carpet to afford colour and interest till the *Hippeastrums* flower; many of them are now showing particularly strong scapes, and promise to be very effective. Other bulbs have been planted out for two seasons in the same manner, and these are showing the strongest scapes, with the additional merit (in both instances) of flowering with the foliage in perfect condition. They were lifted late in the autumn, and planted closely together in boxes, passing the winter in a vinery in a dry state; and started into growth before planting them out in June. I believe, if a little trouble would be taken to select bulbs flowering naturally in August and September,

of a typical "bedding" plant by only flowering once in a season, they possess an advantage in the manner in which they luxuriate in hot, dry soils, such as is usually found in the borders of terraces, at the foot of south walls, &c., under which conditions plants less capable of resisting drought speedily dry out. The species succeeding under the planting-out system are *H. aulicum*, *H. sub-barbatum* (*rutilum*), *H. vittatum* and vars., and hybrids of *vittatum*-equestre parentage. Geo. B. Mallett.

EUCALYPTUS CORDATA.

WHILE *Eucalyptus globulus* is almost universally employed with good effect in sub-tropical and other kinds of bedding, the more graceful *E. cordata* is but rarely seen in this or any other capacity. As the cor-

the sun, and not exclude light. Other houses are devoted—one to *Streptocarpus*, a very excellent strain; another to a large collection of scented-leaved *Pelargoniums*, another to *Pancreatums*. Two houses only are devoted to fruit, one to Peaches and one to Grapes; and of the latter but one variety is grown, and that one not often seen, viz., the Strawberry-Grape. Tomatos are a specialty, several houses being devoted to their culture, and Mr. Groves grows principally a variety of his own raising, a free-setting and medium-sized fruit of excellent flavour.

The pleasure-grounds surrounding the mansion on three sides are extensive, and well furnished with nice specimen coniferous and other trees. A Cedar of Lebanon on the south-west side of the house is remarkable for the manner in which the lower branches have extended while resting on the surface of the lawn to a distance of 100 feet or more in one direction, giving the tree a distinct character. A short distance from the dwelling is a capital herbaceous garden, set out in a square, with marginal grass paths between the beds. A very choice collection of all the best herbaceous subjects are grown here, and also a quantity of a selected strain of Sweet Williams. A short distance to the south is the kitchen garden unenclosed by a wall, where also all the paths are bordered with herbaceous and other flowers for about a space of 6 feet on either side, and backed up with a very narrow and closely-out Yew hedge, which effectually shuts out the vegetable quarters. Here the central borders were especially attractive, standard Roses, and among others, *La France* being extra fine, *Delphiniums* in variety, *Thalictrums*, *Lysimachia thyrsiflora*, and many other subjects being at their best. The pleasure-grounds surround the kitchen garden, and in the shrubbery borders numerous specimens of *Berberis vulgaris* with coppery-bronze leafage, were very telling among others. The presence of water lends a charm to the grounds and rustic bridges over backwaters of the Thames, festooned with *Clematis*, *Roses*, and other climbers, were, indeed, charming. A special feature is also made of pillar *Roses*, covering stout poles some 15 feet in height, on which several old varieties, and the somewhat new *Crimson Rambler* were conspicuous. A large collection of *Violas* is also grown, one of the most showy at the time of my visit being *Harlequin*, and a quantity of *Sutton's Yellow Prince*. An *Antirrhinum* is used in both beds and borders—a fine yellow-flowered, dwarf variety.

As a quiet retreat opposite the mansion, and in about mid-stream, is an island of considerable size, nicely wooded, and also furnished with a few effective flower-beds—a favourite summer resort; while on the lawn I noticed a fine flowering specimen of *Elymus glaucifolius*, a very ornamental grass, which grows freely in moist situations. Mr. Groves is deserving of praise for the admirable keeping of this beautiful estate with the limited staff at his disposal. C. H.

MARKET GARDENING.

HARDY FRUITS.

(Continued from p. 140.)

APPLES.—Being of primary importance, we will first take the orchard sorts, that are best gathered and sold direct from the tree. A somewhat modern purchaser of such fruits is interesting, he caters for the vendors of cheap "Fruit Preserve." Much scandal is talked about this individual, some of it utterly ridiculous, and some absurdly false. His connection with the fruit industry is most beneficial, either from a producer's or consumer's point of view, his business being to buy up all the wind-falls, thinnings, unripe, and otherwise unsaleable fruit, and to boil it with sugar, or without, to make what is termed "Smash," the principal ingredient and foundation of all cheap jams. This, with the addition of "Gold of Pleasure," *Camelinasativa* seed, or other harmless seeds cultivated for that purpose, are added in varying quantities to the mixed pulp. At a casual glance, the stuff afterwards simulates Strawberry or Raspberry-jam, while Plum-stones are put in to make Plum or Greengage-jam.

This unfair, though perhaps harmless, adulteration of the "Smash" enables the trade to sell at such prices as to reach the very poorest consumer, and there is little harm in it so long as the fruit used is not fermented or decayed as to be unfit for human food, and the manufactured article is not sold under a false name. It also allows the grower to make something out of the thinnings from his fruit-trees.

The sorts I have found best for this marketing from the trees, are selected, because they quickly attain to a fair size. The letter "s." indicates their fitness for standards in orchards; "B." for bushes or free pyramids in plantations, and where both letters are used, the varieties will be found useful in either or both positions.

A. *Lord Suffield*, B.—A large conical Apple, and a great favourite with the costers, because, as Albert Chevalier would put it, "they sots well on the barrer." Being somewhat tender, give it a sheltered position, and do not plant it if the soil of your orchard be at all wet or cold, but substitute letter D., E., or the newer varieties, *Gold Medal* or *Potts' Seedling*.

B. *Pomona* (Cox), s.B.—Highly coloured, deeply divided into five segments; most profitable, and useful either as a kitchen or dessert fruit.

C. *Early Julian*, s.—Pale yellow with patches of russet, heavy bearer, cooks well when immature; a market favourite.

D. *Ecklinville*, B.S.—Of the *Codlin* race, early and very prolific; deficient in colour, but of good shape.

E. *Grenadier*, s.—Sent out by G. Bunyard & Sons in the Apple Congress year, and took First-class Certificate; the best early *Codlin*, a reliable cropper.

F. *Hawthornden*, New or Winter, B.—Large, and very handsome; the fruit from old trees on *Paradise* stock often highly coloured and wax-like, making it fine for exhibition.

G. *Stone's or Loddington Seedling*, B.—A fruit of Kent origin, which is very large, heavy, and prolific. Does admirably when grafted on old trees, especially on the "Orange Goff" or *Pork Apple*; most useful for sauce.

H. *Warner's King*, B.S.—Enormous fruit; I have staged it at 30 oz., and it has been exhibited at a local show weighing 2 lb. On *Paradise* stock and well thinned, it gives fruit certain to take honours.

I. *Cellini Pippin*, s.B.—Very prolific, but of poor quality, the tree apt to canker on cold or wet soils; shape very handsome.

J. *Manx Codlin*, B.—Handsome conical fruit, in hot, dry seasons richly coloured; prolific, hardy.

K. *Dominie*, s.B.—Another free-cropping *Codlin*, suitable for cold positions and soils; good marketer.

Of recent introduction, *Improved Keswick Codlin* (Pearson), *Lord Grosvenor*, *Mrs. Barron*, are all worthy of a trial as bushes or free-growing pyramids.

Since the grand Apple-show and Conference held at Chiswick in 1885, a great many new kinds have been sent out, both here and in America, as well as on the Continent, Russia being a leading contributor; but I shall merely give a list of these, as it would be premature to recommend many of them to growers for profit till they have had a long trial under all conditions of position and climate, while most of them at present are too dear for market purposes, but in due time they will come to the front.

Where possible, I have given the name of the raiser or introducer; but for full descriptions, consult the catalogues of leading pomologists. Those that have First-class Certificates from the Royal Horticultural Society are indicated by F.C.

Bow Hill Pippin, A.S. White; *Ohelmsford Wonder*, F.C.; *Domino*, F. Holmes; *Hambling's Seedling*, Bunyard; *Royal Late Cooking*, Veitch, A.M.; *Wealthy* (American).

The position of the trees must always be determined by the site of the orchard, but let the rows run as nearly as practicable N.E. and S.W., which will give the trees a chance to get the maximum of sunlight; while this position minimises, to a great extent, damage by rough winds and gales when the trees are carrying foliage and fruit in summer, or when leafless in winter.

As a rule, the young trees, when received from

the nursery, already show their habit, as it is called, i.e., whether they grow erect and stiff, or pendulous and diffuse. Plant therefore those that conform to the growth of the Lombardy Poplar; as *Pomona* (Cox) outside, and the others which form rounded or weeping heads in the inside of our orchard, the former, as a rule, making their fruiting-spurs on the main branches, and the others more frequently on the points of the same, the latter requiring more attention in pruning than the first.

Now follow those sorts which produce large and tender-fleshed fruits, too liable to be blown down by rough weather and spoiled if produced on standards, and so they should be cultivated as bushes or free pyramids. I use the word free in contradistinction to those very artificial trees, beloved of some amateurs, but as a rule hated by gardeners and fruit growers. These are what I perforce term teased into fruiting by nipping, pinching, and other torture very admirable in a garden of a few perches, but involving the expenditure of too much valuable time in gardens of some extent or on fruit-farms.

This form of tree gives grand results, both in regard to the size, colour, and finish of the fruits, particularly when the trees begin to bear. Also it is the best-shaped tree for plantations, where, till the Apple-trees get large enough to occupy all the space available, bush-fruits, Gooseberries, Currants, or even Strawberries, may be grown between the rows, taking care to avoid crowding the permanent trees or cultivating too near to them, so as to injure the indispensable surface-roots. The number of varieties available for this kind of work is much greater than in the first section, and the usual distance from tree to tree is 12 feet, but on poor land 10 feet apart is enough; and many of the varieties scheduled are useful in both forms, but those with B. attached to their names are strongly recommended as bushes. Remember, the majority of these are best on the *Paradise* stock, as they not only fruit much sooner, but the fine fibrous roots of this stock ramify just below the surface, and are therefore in the position to take all the benefit of mulchings of farmyard manure or artificial compounds, the most lasting and satisfactory among the latter being wool-waste, or shoddy as it is called in Kent.

If maiden trees are planted, and the work be done in October, the following March the leading shoots may be just stopped, and any weakly or crossing branches removed. Never prune Apple-trees at time of planting, and, with the exception of a few varieties, after three years, Nature may be relied upon to do this with very little aid from the cultivator, the primary object being to afford the growing tree the very utmost amount of air and sunlight possible. It is marvellous how this checks the growth of lichens and moss, and keeps the trees in robust health, preventing attacks from injurious insects of all classes. Continuing varieties best to gather and sell direct from the trees, let the bushes and pyramids consist of the following, which are early in maturing and getting to full size, but though many good varieties are unavoidably omitted they are either uncertain or biennial croppers, or too small for profit:—

A. *Astrachan, Red*, B.—Very handsome and highly coloured, with Peach-like bloom; a great market favourite.

B. *Castle Major*, B.—Large, handsome and heavy.

C. *Hornead's Pearmain*, B.—Large, deep lemon coloured; often carries a crop when others fail.

D. *Lane's Prince Albert*, B.S.—Fine shape, large and handsome; a prodigious bearer, F.C.

E. *Stirling Castle*, B.—Of the Hawthornden race, fruiting abundantly; fine for exhibition when taken from young trees.

F. *Emperor Alexander*, B.—An old and well-known variety from Russia; large and beautiful in form and colour.

G. *Frogmore Prolific*, B.S.—A most reliable cropper in great favour with suburban market growers.

H. *Wadhurst Pippin*, B.S.—Large and handsome off young trees; very reliable cropper.

I. *Sandringham*, F.C., R.H.S., B.S.—A fine variety originating in the Prince of Wales' gardens; hardy, free-growing, and prolific.

J. Blenheim Orange, B.S.—A well-known favourite, but an uncertain cropper till the trees get old. One of the best to bake.

New varieties are *Christmas Pearmain*, B. (Bunyard), a heavy cropper, with fine colour; very attractive, and fit for kitchen use or dessert.

Mrs. Barron, B.—Large, very handsome, and of excellent quality, either for cooking or dessert.

Atalanta (Ross), A.M., R.H.S., B.—Heavy cropper.

Belle de Pontoise, B.—Of Blenheim race, very fine and heavy; a fine exhibition-fruit.

Belle Borodowka, B.—An extremely handsome Russian variety. An improved "Alexander," and good cropper. Come to stay!

Duke of York (McIndoe), S.B.—Good where it does well, but uncertain.

Foster's Seedling, B.—An improved Cellini, which appears to be free from canker.

Gospatrik (Ross), S.B.—Another good thing from this raiser; free-bearing, and free-grower.

Keswick Improved (Pearson), S.B.—Like the old well-known variety, but keeps well to December.

in shape, colour, and aroma; should be promptly marketed.

Williams' Favourite (American), A.M., R.H.S., B.—A very handsome conical fruit from Canada.

Ribston Pippin, B.S.—An universal favourite, subject to canker; but if care is taken to select clean stocks and scions, and to plant it only in well-drained fresh soil, it will maintain good health and vigour, and amply repay the grower.

Cox's Orange Pippin, S.B.—Next to the above, the finest dessert Apple in its season, very handsome, with Ribston flavour.

King of the Pippins, or *Kentish*, S.B.—A well-appreciated Kentish fruit, free-bearing, and most saleable when finished well.

Worcester Pearmain (R. Smith), S.B.—Free bearer, and very pretty, capital market fruit.

Yellow Ingestre, *Golden Pippin* of *London Markets*, S.B.—Small, but most prolific and marketable.

King of Tompkin's County, or *King* (American), B.—Very large, and exceedingly handsome; flesh tender, and of fine flavour. Requires a warm situation.

crisp and fresh till the early Apples ripened, must be merely mentioned, as it is too insignificant and unattractive to sell. *Experience*.

(To be continued.)

DENDROBIUM DEAREI.

ON July 12 last there was exhibited before the Orchid Committee of the Royal Horticultural Society a magnificent specimen plant of this exceptionally useful white-flowering Orchid. It came from the gardens of Herbert Hicks, Esq., Bramwoods, Chelmsford (gr., Mr. Jas. Machar), and had been grown there for a period of four years. Some of the leafy pseudo-bulbs were over 3 feet in length. The plant bore thirteen spikes, the largest pseudo-bulb having three large racemes of flowers to the number of thirty-three. Four spikes had already been cut. When it flowered previously the plant was more or less in bloom from April until the following February. Most of our readers are doubtless aware that the flowers of *D. Dearei* are capable of lasting a very long period. In fig. 53 we have pleasure in presenting an illustration of this fine plant, which is certainly a testimonial to the skill of the grower under whose care it has so well succeeded.

NURSERY NOTES.

DICKSONS, CHESTER.

THE extensive establishment of Messrs. Dicksons is known to be one of the largest and best equipped of provincial nurseries. A trip there may consequently be made an event to be pleasantly remembered, especially as the ancient and picturesque city of Chester itself is uncommonly attractive. We are able to write thus from the fact that we were recently there; and if the chronicle of certain features of the nursery will lead any horticulturists who were never in Chester to make such a pilgrimage, we will assure them against disappointment. In the first place it may be remarked, that though the grounds are several hundreds of acres in extent, order is maintained everywhere. In the planting it will be observed there is system; and so far as our experience went, there was most convincing evidence of frequent and effective cultivation of the surface-soil, there being almost perfect absence of weeds—the lazy gardener's sign-post.

Not more than five minutes' walk from one of the entrances to the Central Railway Station, and the nursery may be reached. The broad drive from the road to the offices, through wide and well-kept flower-borders, at once impresses a visitor with the neatness of the place—neatness that he will later discover is carried to the very extremities of the plantations.

THE GLASS-HOUSES.

From the offices our steps were first directed to the glasshouses, where we saw a good stock of very miscellaneous plants, such as are required in most gardens. Several of the structures contained Palms, others were devoted to Ferns, Aspidistras, Camellias, Pelargoniums of all sections, Caladiums, Gardenias, Streptocarpus, Lapagerias, tuberous-rooted Begonias, which made a first-rate display, a few species of Orchids, and several species of greenhouse plants, including a quantity of Fuchsias and Carnations. Of Pot-Roses there are some 10,000 of them cultivated each season. These were growing apace, and possibly have since been turned out of door. There are 2,500 Vines in pots, and they represent all of the popular varieties. Such is the number raised every season. There is a span-roofed orchard-house, measuring about 50 yards long and 20 feet wide. In this there are Peach, Apple, Pear, Plum, and other fruit-trees in pots. Some of the Apple-trees carried fine crops of fruit, especially the varieties Bismarck, Stirling Castle, and Warner's King. In other houses were young plants of Ampelopsis, Clematis, Codiaums (Crotons), &c., and we may mention the new Cordyline (*Dracena*) *Kippisii*, which was exhibited by the firm at the Temple Show this year. *D. Kippisii* is a singular variety, by reason of its purple leaves being incurved longitudinally. The leaves thus narrowed (not unlike some of the *Codiaums*), give the plant an especially light appearance, and it is very suitable



FIG. 53.—AN EXCEEDINGLY FINE PLANT OF DENDROBIUM DEAREI.

Rambour Papelin (Le Roy), B.—Very large, fine, for late use.

Rivers' Codlin, S.B.—A variety which cooks without falling, and so is bound to please the cook.

Gold Medal, B.S.—Of the Codlin race; a hardy free-bearer, and handsome.

DESSERT APPLES.—This, though a necessary class, is of minor importance compared with the last; nevertheless, it cannot be altogether passed over by the most utilitarian. Many of the e are best put on the market direct from the orchard, but others pay to store. Let us take the first now in their order of ripening. For standards:—

Beauty of Bath, F.C., R.H.S., B.S.—Most attractive in colour and form, regular and heavy cropper.

Mr. Gladstone, F.C., R.H.S., B.S.—One of the earliest, beautiful in colour, and carrying a bloom like a Plum; most agreeably scented and flavoured.

Devonshire Quarrenden (Quarantine of the fruit-shops), B.S.—Well-known; best in a warm situation, and on good dry soil.

Irish Peach, B.S.—now supplanted by *Lady Sudeley* and *Rivers' Early Peach*.

Juneating, Red, S.B.—Forms a good fertile standard on the Crab; colour and shape attractive.

Kerry Pippin, S.B.—Though small, if left to ripen on the tree, it is the best-flavoured fruit in its season. Prolific, and regular cropper.

Benoni (American), B.—Highly recommended by Mr. T. Rivers.

Lady Sudeley (Bunyard), F.C., R.H.S., B.—Fine

Braddick's Nonpareil (Kentish), S.B.—Perhaps the finest of the race; too small, as a rule, for market, but indispensable in the private garden.

Mannington Pearmain, S.B.—A very conical highly-coloured Apple, and of medium size where from young trees or thinned.

Anna Elizabeth, B.—Large and handsome, stores and carries well. A market favourite.

Claygate Pearmain, S.B.—Not large, but fairly prolific, often sold as "Ribstons."

Sturmer Pippin, S.B.—Very late, but in its season, a valuable dessert fruit.

Court Pendu Plat, S.B.—A heavy cropper, even in scarce years, highly coloured and rich in flavour.

Fearn's Pippin, S.B.—A very pretty fruit, but too flat to find favour in the market.

Boston Russet, B.—A useful dessert Apple, for late use; and lastly—

Lord Burleigh, S.B.—Very fine, of Pine-apple flavour. A valuable late fruit.

I am painfully aware that my list is very incomplete, though too lengthy, and that I have been obliged to omit many good Apples; the only objection to which is they are not free croppers, they are deficient in size, or wanting in attractiveness through lack of colour or form. As an example may be cited "Alexandra Nonpareil," sent out by Bunyard in the 60's as an early dessert fruit, perhaps unequalled, but too small, even when from young trees; while among old established varieties, *Guernsey Pippin*, a green-fleshed fruit, covered with brown russet, and keeping

for dinner-table ornamentation. Our attention was directed to a new Tomato, known as Scarlet Queen. The fruits produce a little nipple-like excrescence in place of the eye, similar to that in some Peaches. Whether this be an advantage or not our readers may decide. It is certainly better than an open eye. There is a new yellow-fruited variety named Royal Sovereign, but fruits were not then ripe. A new Carnation deserves mention, though we were not fortunate enough to see plants in bloom on the occasion under notice. It is a yellow-flowered Tree Carnation, named Duchess Consuelo, and was shown at a meeting of the Royal Horticultural Society, in London, in June, 1896, by the raiser, Mr. T. Whillans, gardener to the Duke of Marlborough, at Blenheim Palace. Its canary-yellow coloured flowers are very large, and the petals smooth. Messrs. Dicksons say that the variety flowers very freely, and may be had in bloom throughout the year. The stock of plants we saw appeared of strong growing habit, and very healthy. Close to these houses and to the offices is a flower-garden, which, being planted with good bedding-plants of the ordinary species, and tended with care, is a gay feature. Not far distant is what is known as the

HERBACEOUS DEPARTMENT,

where there may be seen an endless variety of hardy flowering perennial plants. The border Carnations made a splendid show of bloom, a large space of land being devoted to these. AM the choicest varieties to date are in this collection, including those raised by Mr. Douglas and other specialists. Miss Audrey Campbell is the best yellow-flowered variety, and there were Her Grace, blush white; Braw Lass, Bendigo, deep purple; Mr. Nigel, a very fine yellow-ground Picotee; indeed, sufficient variety for everyone. The work of layering these was being pushed forward to completion. The large-flowering hybrid Pentstemons in named varieties of various colours gave also a wealth of fair blossom. The Hollyhocks were approaching the blooming stage, and in addition to being named varieties, they appeared free from the mischievous disease that for a time rendered the cultivation of these plants in Britain almost an impossibility.

The bold handsome red-hot poker (*Tritoma Uvaria*) were already in bloom, and among the numerous varieties was *Lachesis*, a most distinct and pretty flower, with rich apricot-coloured blooms. A large breadth adjacent was aglow with the several sections of *Gladiolus*. First were the *G. gandavensis* hybrids, next the fewer but larger flowered varieties known as *Lenhoutei* hybrids, in which the markings of the flowers are so intense and distinct, and lastly the *Nanceianus* varieties. All of these were to name, and being in full flower a purchaser could conveniently choose by comparison those desirable for his own collection. Next we noticed a considerable mass of the grandiflorum variety of the white-flowered *Chrysanthemum maximum*; the blooms of this form sometimes measure as much as 4½ inches across, and whether extra large or not, they are effective, in the garden or in a vase. The fine *Helenium grandicephalum striatum*, and *Clematis Davidiana*, were interesting plants in the extensive collection of herbaceous perennials.

The herbaceous Phloxes were in bloom, and a large breadth of *Montbretias* in variety had lately made a fine show. These useful flowering bulbous plants increase most rapidly, and require to be lifted and divided before the soil has become exhausted. Thus are the best results obtained. Beside the larger-habited herbaceous plants, there are many alpine species growing in suitable situations, and in a tank of water, among a few of the choicer species of aquatic plants, the *Water-Lilies* were in bloom. The more popular species of *Nymphaea*, and several of the beautiful hybrids of *M. Marliac*, could be observed here.

We have already referred to the quantity of

ROSES

grown annually in pots by Messrs. Dicksons. The outdoor Roses are also a most important feature of this nursery, and they occupy a piece of ground 25 acres in extent. About 125,000 dwarfs and 40,000 standard Briars are budded each season. The

standards were already done, and the dwarfs commenced before our visit was made. Roses grow and flower very well in the Chester district. All of the plants had made a satisfactory growth this season, and the mildew that was present in places could be easily explained by the very cold winds that had recently prevailed. The season is naturally later than that in the London district, and there were consequently plenty of good blooms still upon the plants. A considerable number of visitors to the rosary showed that at Chester, as elsewhere, the attractions the queen of flowers possess are felt and acknowledged. The collection includes most of the very latest acquisitions, all, indeed, that are known to possess advantages over existing varieties, whether of British or foreign origin. From the Roses we naturally turned to the—

FRUIT GARDEN,

and in this section also the scale is a large one. There are some 80 acres covered with fruit-trees, and these include very large stocks of Pear and Apple-trees of the more popular varieties, and that are known to succeed best in the Midlands and the northern counties. Cherries, Peaches, Nectarines, Plums, Figs, and Strawberries, as well as bush-fruits and Nuts, are all in stock, and there are fine specimens of each. The present season is not remarkable for an abundance of hardy fruits, and in the Chester district there are no very heavy crops. Pears are very few. Apples, though comparatively thin, are not so scarce. Plums, Damsons, and Cherries have been considerably below the average yield. Leaving the fruit section, we inspected the immense collection of—

FOREST AND ORNAMENTAL TREES.

If such general nurserymen as Messrs. Dicksons may be said to have a *spécialité*, it certainly is that of trees and shrubs. The grounds are so extensive that we found it to be exceedingly convenient to accept the suggestion that progression from one section to another should be made by other means than pedestrianism. Throughout the entire collection could be seen thorough cultivation, and hence prepared trees of every kind are in stock, which may be transferred a considerable distance, and replanted with comparatively little check. Conifers abound in large numbers, and little difficulty is experienced in their cultivation at Chester, if we except *Picea Webbiana*, *P. Pindrow*, and several Mexican species. Most of the ornamental varieties of the species of Conifers might be seen, including a nice batch of young plants of *Cupressus macrocarpa lutea*, a golden form introduced to commerce several years ago by Messrs. Dicksons. There are beautiful specimens of the Weeping Beech, the purple-leaved Beech, and of the type. The Oak thrives with almost equal vigour to those in the neighbouring county of Staffordshire, and the more ornamental species and varieties are specially cultivated. Magnificent trees of the white Birch were noticed, and the Golden Elder, the variegated *Sycamore*, the golden-leaved Yew, and Hollies created patches of brilliant colour among the general stock of ornamental and flowering trees and shrubs. Speaking of flowering shrubs, we are reminded of the *Rhododendrons*. A fine collection of these grand plants was seen, and apparently with the exceptions of *R. Manglesii*, *R. × Mrs. Geo. Hardy*, and possibly a few others, they grow and flower well. Of the *Weigelas* a very fine form is the variety *Edith Rathke* (Späth), a purple-flowered plant of much distinctness. The numerous varieties of Japanese Maples are said to be tender at Chester. They are apt to shoot early in spring and be nipped by late frosts, just as the Tree Peonies are served in the same district. The Maples were consequently in a large house. They are cultivated in pots, and all the plants are "worked" specimens. The *Magnolias*, on the other hand, are said to succeed satisfactorily. We saw one of the best collections of *Romneya Coulteri* we have ever observed. The plants were in pots, and appeared in excellent condition. Some of them carried a few of the large, single, somewhat tender flowers, which are sometimes as much as 7 inches across. A large plant in flower is a most effective feature in the best pleasure-grounds.

In a large, span-roofed, cold-house was a number of shrubby plants that are considered tender in the district, or from being novelties are at present but small specimens. There we observed what will be sure to become a very popular plant, viz., *Sambucus racemosa plumosa aurea*, also *Cornus aurea* *Spathulifolia*, *Ulmus Dampieri aurea*, *Ilex insignis*, *Lonicera Hildebrandti*, the perfectly hardy and very ornamental *Elæagnus japonicus macrophyllus*; *Eucalyptus Gunni*, with roundish leaves; *Ginkgo biloba* (Maidenhair-tree), and the Japanese Oak (*Quercus cuspidata*); also *Abutilon vitifolium*, of which there is a collection of 1000 one-year-old seedlings; *Rhododendron × Kewensis* finds a place there, and *Amorpha canescens*, a useful plant for the rockery. There is a large collection of young plants of *Vitis Coignetia* and the perfectly hardy and pretty *Rhus glabra laciniatus* was noticed.

But we must lay our pen aside for the present. This note will possibly convey an idea of the principal features of Messrs. Dicksons nursery. The firm possess two other and smaller nurseries in Wales, where seaside plants and the dwarf shrubs principally are cultivated. The general offices and seed-warehouses, including those for agricultural seeds, are in the main street of the city of Chester.

At the risk of repeating ourselves, we will close by recommending gardeners who from any cause happen to be in the locality, to make a point of visiting "Dicksons, Chester."

REMINISCENCES OF COVENT GARDEN MARKET.

(Concluded from p. 174.)

GRAPES, hothouse home-grown, were usually brought in punnets that contained 2, 3, or 4 lb., the former being the more saleable size. Pines consisted of the Queen and Providence, and the ordinary price was 8s. to 10s. per lb., so that quite an ordinary-sized fruit would cost 20s. Strawberries have undergone a wonderful change—they used to come in pottle-baskets, very narrow at the bottom, and deep, with a handle across the top. One big Strawberry was sufficient to half-fill the pottle, or rather prevent its being filled, and the form caused the fruits to crush each other, and it moreover was most unsuitable. Two pottles were called a gallon. In bringing them to market, they were packed in round baskets called "rounds," and the usual size held 36 pottles, which was called 18 gallons. The varieties chiefly grown were Keen's Seedling, Scarlet, and Elton Pines. Even at that date the flat punnets were in use by some of the gardeners for British Queen and Sir Charles Napier, the former being called "Queens." These punnets held 1 lb., and were carried on the head by women direct from the gardens to the market, packed in a light round basket, and tied over with a clean white cloth, and fine in condition they came, and as the cultivation increased, punnets became the rule, and light vans were built for rapid delivery. Then, as time went on, baskets holding one peck became the rule.

Cucumbers used to fetch long prices in those days. The late Mr. Kemp, gardener at Albury Park, Surrey, once told me he used to force Nettles in the glass-houses wherewith to pack Cucumbers, and had had returned by the late Mr. Jno. Black, of South Row, as much as 15s. a brace. Our growers used to pack them to the number of six in a flat, very shallow punnet, and prices varied considerably, according to size and quality. Each succeeding year brought many more fruits, and prices naturally got lower. In the sixties large quantities were grown outdoors, about Biggleswade and Sandy; but that is almost a thing of the past.

Of Radishes, the long-rooted varieties came to market, at first washed and packed, not tied.

hands, six hands in a punnet, and they usually made 1s. to 1s. 3d. Later in the season they would be packed, unwashed, in hands, in baskets called junks, oval baskets, with four handles, holding about a bushel, certainly not more. Another similar basket, called a half load, holding double the junk, was also used; the junk seems to have died out, but the half load and load basket are still in use. Of Peas, the earliest to arrive were Daniel O'Rourke, Scimitar, Champion of England, and a few of the Marrowfats as Veitch's and Knight's Perfection, and Ne-plus-ultra; the last named Pea coming in bushel baskets, as now. As a substitute for early new Potatos, Kidneys of the Ashleaf type were grown late, and taken care of for marketing very early. They would be washed and packed in paper-lined deep punnets holding 2 lbs., and they commanded a ready sale from 6d. to 8d. per punnet.

The purple Cape Broccoli was well to the fore, and it was well grown, and had compact, solid heads. It was skilfully tied in bundles, so as to show 6, 8, or 12 heads, according to size, and these commanded good prices. The white Broccoli, from the Enfield district, used to be similarly bundled. Rhubarb was only grown by a few men, viz., Myatt, Mitchell, Hawke, and others; but as time went on the cultivation of Rhubarb went on apace, and was at last overdone.

The principal varieties of Potatos then coming to the market were Ashleaf, Shaw's, Fortyfolys, Regents, Dalmahoy, and Rocks; the Regents were then, I fancy, of better quality than now; and large quantities were sold about the streets—the baked Potato-can being common about town. Evans' was noted for its chop and baked Potato; I refer to the time when Herr Von Joel was a well-known character connected with the place.

Asparagus was grown in very much larger quantities than now, and I have seen a grower, Jessop by name, have a van-load of Asparagus in bundles packed in loosely without any baskets.

Lastly—a most important thing, showing how customs have changed in fifty years, the custom was for growers and salesmen to lend empties free of charge, and in the busy season the salesman would send a man with horse and cart round three times a week, collecting empties from his customers. Now that is entirely changed; the rule is to charge on all returnable empties, and there are very few exceptions. T. P.

SHORT NOTES ON BULBOUS PLANTS.

(Continued from p. 159.)

HEMANTHUS PUNICEUS.—The flower-head of this species is borne on a short, stout scape, and consists of a dense umbel of flowers about 4 inches across; the mass of segments and filaments are bright coral-red in colour, the richness being heightened by multitudinous bright yellow anthers. It will pass the winter safely if planted about 4 inches deep in a fairly dry spot in the rock-garden under the shelter of a ledge of stone, covering it with ashes or other protecting material during severe frosts. Several bulbs planted together in a small recess would make a brilliant blaze of colour, which would be effective at a considerable distance away. It flowers during the summer months, lasting in perfection for several weeks.

Lycoris squamigera.—This pretty subject claims the attention of cultivators from the fact that it is the only plant of the genus *Lycoris* that may be called quite hardy—in fact, bulbs in pots outside have been frozen through, and have not shown the slightest

injury. By reason of its hardiness, it makes an excellent plant for a warm-border or rock-garden. The leaves, which appear early in the spring, and die down before the scapes appear, are 1½ feet long, glaucous-green in colour, strap-shaped, average an inch in width, and are eight to ten in number. The flowers are about 3½ inches long, and 3½ inches across, six to eight in number, and they are borne on a scape 2 feet long, after the manner of *Vallota*; each flower consists of six slightly recurved segments, half-an-inch wide at the middle, which are united near the base by the vestige of a corona, the colour being a soft shade of rose, with a blue tinge at the tips, and a yellow base; the prominent crimson style and paler filaments are depressed, so as to break through the perianth, recurving at the tips. If cold weather prevails at the time of flowering, the blue tinge is suffused throughout the whole flower. The bulbs resemble those of *Narcissus*, but are distinctly "shouldered;" they should be planted 3 inches below the surface, preferably in a light soil, with a well-drained subsoil, and left undisturbed. Three and four scapes have been produced by a single bulb, bearing upwards of twenty fine flowers, which was planted on a Peach-border two years ago. Grown in pots for conservatory decoration, it far excels the Scarborough Lily in the delicacy of its colours, and unlike the *Vallota*, it does not mind the vitiated atmosphere of a London suburb. It appears not to be subject to bulb diseases; out of some hundreds of bulbs I have not found one affected, while *Vallotas* invariably succumb in the second or third year. It likes a fairly large pot, as it is a gross feeder during leaf-growth; and requires to be kept moderately dry when at rest. Feeding with manure-water is amply repaid by the fine flowers produced. It flowers in August, and is a native of Japan.

Pancratium canariense.—Although undoubtedly hardy if planted in a warm border with a little protection, this plant is seen at its best when grown in pots for the conservatory; the flowers are borne in the manner of *Eucharis*, usually upwards of twelve in number, and appears just as the leaves are starting into growth. They measure about 2 inches across, are pure white in colour, and deliciously fragrant, the segments are narrow, and the staminal cup has an acutely lobed or cleft margin; the short filaments are incurved so that the anthers touch. It is not an easy plant to flower, but it appears to do best when a decidedly dry rest is given it, plunging the pot in the full sun to ripen the bulb as soon as the leaves finish growth. It is a native of the dry rocky districts of the Canary Isles, and it flowers in August in this country.

Hymenocallis littoralis (H. adnata) is a very useful plant both for cut flower or for greenhouse decoration; the flowers are deliciously fragrant (I believe the sweetest in the whole genus), and it has the additional merit of being easy to grow in ordinary warm greenhouse temperature. It produces upwards of twelve strap-shaped, glabrous-green leaves, about 2 feet long, and a stout peduncle bearing from sixteen to twenty pure white flowers on long pedicels. The channelled and narrow segments are drooping, and are joined (adnate) to the staminal cup 1 inch upward from the tube; the staminal cup is membranous, 1 inch long, and 1 inch across, with an irregular margin; the style and free portions of the filaments are green. A botanical distinction is noticeable in *H. littoralis*, by the filaments being inserted near one end of the anthers, instead of the middle, as in other species. I do not find any remarks of this peculiarity in any description of this species that I have seen. It does well treated as a sub-aquatic during the growing season. I usually place the pots in about 4 inches of water in the full sun, in a temperature of 55° to 60° as a minimum; and keep the soil moderately damp while the bulbs are resting. It is easily raised from seed, which germinates freely in water alone; they are, however, better managed in small pots standing in shallow pans of water. It flowers with me in July and August, lasting in perfection several weeks if the plants are shaded while flowering. Geo. B. Mallett, Isleworth.

KEW NOTES.

FREESIA ARMSTRONGI.—I propose this name for a distinct new *Freesia*, which has been sent to Kew by Mr. W. Armstrong, of Port Elizabeth, who found it wild on a farm in Hamansdorp, and forwarded bulbs of it last March. It is in flower now at Kew, and although Mr. Baker considers it only a colour variety of *F. refracta*, it is so distinct from all the forms of that plant hitherto known, that for horticultural purposes, at any rate, it requires a distinctive name. Mr. Armstrong described the flowers as pink, but they are orange-yellow on the lower part of the corolla-tube, and purplish-pink on the segments. There are only half-a-dozen bulbs of it at Kew, but they are all flowering. In the hands of the hybridist this plant, with its richly-coloured flowers, ought to lead to the production of a race of *Freesias* as varied in colour as one could wish.

KAMPFERIA MACROSIPHON.

This has lately flowered at Kew, roots of it having been presented by Baron von St. Paul, who obtained them from Usambara, in German East Africa. It belongs to the large-flowered section of the genus, typified in *K. Kirkii*, previously known as a *Cein-kowskia*; the leaves are tufted, green, lanceolate, a foot long; flowers many, on a short peduncle, with oblong bracts, a cylindrical calyx, a long, slender corolla-tube, and a spreading limb, with lobes an inch long coloured blue, the lip rounded at the apex, and an inch wide. According to Baker, it was first found by Wakefield in the Nile country. It is an interesting plant, of easy culture in a moist stove. At Kew it is one of a large collection of small *Scitamineæ* and *Marantaceæ*, grown on a low rockery under the *Nepenthes*, in the new house recently built for these plants.

CRINUM FIMBRIATULUM.

This is now flowering in a stove at Kew, bulbs of it having been received from West Tropical Africa. It belongs to the same set as *C. Kirkii*, *C. Sanderianum*, and *C. yuccæfolium*, indeed I have a difficulty sometimes in deciding to which of these a given plant when in flower belongs. However, Mr. Baker's description fits the Kew plant, which has thin lorate, glaucous green, tapering leaves 2 feet long, and 2 inches wide near the base; a peduncle 2 feet high, bearing an umbel of five flowers with elegantly curved tube, narrow recurved petals 3 inches long, white, suffused and banded with dark crimson, as also, is the tube. All the *Crinums* of this set are most attractive in flower, but their flowers last only for a few days. They like plenty of water. W. W.

SCOTLAND.

CARNATIONS IN THE OPEN.

THOSE who, like myself, have a mild horror of leaving layers unplanted till late autumn, will find themselves comparatively busy during the whole of September in planting out their stock. After September is past, I think it preferable to reserve plants in cold frames till the spring, rather than plant them out in beds at a period when it is impossible that the roots can obtain a firm grip of the soil before the winter. The Carnation is undoubtedly a hardy plant; rather susceptible to damp, yet it successfully passes through a hard, dry frost; but none, save well-established plants, can be expected to prove hardy in a severe winter.

When preparing beds, I omit one or two items generally insisted on. For instance, the ground is not trenched; last year it was not even dug. The crop immediately preceding was Carrots, which, following Celery, left the soil sufficiently open. This year the Carnations will follow Onions, and the only attention the ground requires is a slight forking of the surface; I do not add any manure. Soil in good condition produces excellent Carnations, and the addition of manure is always followed by risk. As in the case of some crops which do not respond to manure as the cultivator would wish, its addition in

this instance is not solely negative, but, on the other hand, is often largely prejudicial. In the planting of the layers, the stems are covered only to the level of the divergence of the tongue. Many times I have noticed that weakly varieties attached to a sustaining stick, and with the roots merely covered, have attained vigour, and in the same way shallow-planted layers have invariably got on better than those with a portion of the stem covered.

Another practice, which, by the way, is of some antiquity, is that of raising the beds above the surrounding level. Much of the prejudicial wetness that gathers about the plants during winter is obviated by—firstly, not deeply loosening the soil at planting; and secondly, by raising the bed with a compost of equal parts leaf-soil and sand, and mixing the new material to a depth of a few inches. The layers are planted in this material, and do not suffer to any extent during spells of wet weather, as the water quickly drains away.

There is always a certain number of layers which require protection in winter. These may be left till October, but a good working rule is, the sooner the layers are planted the better. Carnations wintered either in pots or in the method to be described are never so strong as those planted in the open; but of the above, those planted in frames are always the stronger. The frame is set either on very hard ground, on the surface of which a thin layer of leaf-soil is spread, or the bottom is composed of coal-ashes firmly trampled down. On either of the bases chosen, the balls attached to the layers are placed, and the few open interspaces are filled up with sand and leaf-soil, and left till February without allowing any water to get into the frame. Ventilation is given on every favourable opportunity, and the result is, capital plants with a network of roots attached, ready in this district from the middle of March for planting.

There is, I think, a large number of bought-in layers lost every season. This occurs principally because they come to hand too late to do well if planted in the open. During many years my own losses have been scarcely any, and because I have not ventured them in the open unless early received. Generally, I flower all new sorts the first year in pots.

In Scotland, the Carnation blossoms a little later than in the South of England, where the flowers come with a spurt, and are soon over. Here they open more slowly, and blossom sometimes until the approach of winter. The value of Carnation blooms for the adornment of sitting-rooms or the dinner-table, in various styles of glasses or vases, can hardly be over-stated; and our Scottish homes are made gay by them at a season when there are few blooms obtainable in England.

DIERVILLAS (WEIGELAS) IN AUTUMN.

Diervillas, other than *D. rosea*, are hardly known in Scotland. They are perfectly hardy here, however, and make long and stout growths, many of the varieties having the desirable quality of flowering in early summer, and again in autumn. For the information of those who have not yet tried these very acceptable flowering shrubs, I add below the names of some of those which flower twice a year. A few of them grow somewhat close to the ground, and in order to raise them in some degree, I am training a few as standards. The only kind that I have found fail to pass a hard winter is *Diervilla præcox*; it is some satisfaction that this species is possessed of some little beauty. *Souvenir de Marie Van Houtte*, whitish; *Jean Mace*, very dark; *Congo*, crimson; and *John Standish*, crimson, may be recommended. *B., East Lothian.*

VARIORUM.

SPHAGNUM MOSS.—The issue of *Nature* for August 18, in an article entitled, "A Yorkshire Moor," gives an excellent sketch of the growth of a sphagnum swamp, accompanied by figures showing a leafy branch and a leaf, the latter much magnified; details of leaf, showing green cells with corpuscles, and water-cells, with spiral threads and pores. How little does the ordinary cultivator of Orchids know of the form and life-history of the "moss" which forms the basis of most of the composts he employs for his

plants! The minute plant growing upwards and furnished with unfolding leaves, which in time lose their living substances, and are transformed into water-holding cavities with transparent walls, is adapted so as to allow the water to creep upwards to supply the growing branches above. The lower parts of the film die, become detached, and sink to the bottom of the pool, forming, in course of time, peat, firm as regards its lower strata, but soft and spongy above, at length becoming a peat-bog, capable of supporting Heather, Bracken, and other herbage, but requiring ages to become firm enough to support the weight of a man.

THE WEEK'S WORK.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

Bulbs.—The season has now arrived when consideration must be given to the question of bulbs for planting the coming season. It should be decided what number of each kind will be necessary, that the order for same may be despatched as early as possible. A flower-garden never looks brighter or more gay than in the spring of the year, when the beds are aglow with a nice collection of bulbs, carefully disposed with due appreciation to the necessary arrangement of colour, and in the case of mixed beds, to the suitability of the kinds for this purpose. The date for planting the bulbs has not yet arrived, but it is necessary to work out the system to be followed in the planting, so that one may know exactly what stock to acquire. Just as with seeds, the best bulbs are most likely to be used in the discharge of the orders earliest received.

Dahlias are now blooming freely, and to enable them to continue flowering until cut by frost, constant root waterings may be needed, and liquid-manure may be given every alternate watering. Remove all weak growths, and especially the seed-pods, from single-flowered varieties. See that the growths are made secure against wind and heavy rains. The best varieties for general purposes are those of the Cactus section; the flowers are less stiff and formal than the show and fancy varieties, and consequently the better adapted for use as cut flowers.

Lilium auratum and *L. longiflorum* just coming into bloom should be given occasional applications of water, which will greatly benefit the flowers.

General Remarks.—The plants in the herbaceous borders, as they pass out of flower, will require to be trimmed of all dead blooms and leaves, and in some cases partially cut down. Annuals which have done flowering should be removed before they present an untidy appearance. Later sown annuals may be afforded a good soaking of water to stimulate growth and help to develop the flowers. Very rarely at this season of the year is the ground so hard and dry as at the present time; and *Phloxes* in particular have suffered severely. Continue the mowing of lawns as they require it; clip all the verges frequently, and roll the walks where the gravel has become loosened.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Pot Vines.—The Vines that were raised from eyes in the winter months, may, if the canes are ripened throughout, be regarded as completely matured. Theinery in which they have been grown may be freely ventilated at all times, and artificial heat dispensed with. Although active growth in the Vine has ceased, as often as the soil exhibits signs of dryness, water must continue to be applied, and the foliage syringed with clean water daily in the afternoon in fine weather. In about three weeks the plants may be placed against a fence, hedge, or wall, or to stakes driven into the earth, making them secure in an upright position, and making sure that no worms can enter the pots from below.

Strawberry-plants.—The earliest potted of these having made rapid progress, filling the soil with roots, will require daily, copious applications of water, using the rose water-can or the syringe to wet the foliage on fine afternoons. Mildew is getting troublesome. If syringing, &c., fails to keep it in check, flowers-of-sulphur will have to be applied. For this purpose, first mix the sulphur as a thick paste, and mix it with water at the rate of half a pint to 2 gallons of the latter, stirring it well, and applying it to the undersides of the leaves with a syringe furnished with an elbow-jet. For a few days after-

wards the leaves should not be wetted. Remove runners as soon as they become apparent, and frequently turn the plants round, to prevent rooting into the bed of coal-ashes.

Peach and Nectarine Trees which have been growing against outside walls preparatory to being brought into the forcing-house, may soon be transplanted from their temporary to their permanent positions. By performing the operation thus early, the trees will get established while there is heat in the soil, and sufficient solar heat to influence the production of new roots. Provided the trees are of a fruiting age, the having suffered no appreciable check, will furnish a good quantity of fruit the following year, although it may be prudent not to force them very early. If a fresh tree is to take the place of one that is worn out, it will be advisable to remove the whole of the old soil, and clear out and rearrange the drainage materials. If the subsoil consists of clay, or is naturally retentive of water, a concrete-bottom may be considered necessary, but this is not essential if the drainage and outfall-drain be put in working order. The ground beneath the drainage should have a slope towards the front or towards the ends of the Peach house. I have dealt with the making and drainage of borders in previous articles, and I need not do more than refer the reader to them. The best kind of soil for the Peach is a heavy pasture-loam, cut in sods of 3 or 4 inches thick, and laid in stack for a year. With this may be incorporated considerable quantities of lime-rubble and charred soil, the whole being mixed well together before being wheeled into the house. Do not put a large mass together, and then try to make it firm, but put in layers of about 9 inches in thickness, trampling each layer evenly and firmly before putting in another. Having raised the border 6 to 8 inches above the general level, to allow for shrinking, and dug out a hole wider than the roots of the tree to be planted, and 9 inches deep, excepting at the spot where the base of the stem will rest, which may be 3 to 4 inches higher; and having levelled the bottom of the hole, and made it slant a little from the centre to the sides, planting may proceed. Having disengaged the tree from the wall, and bundled up the branches and shoots, dig out the roots very carefully with digging-forks, beginning at the furthest extremity of the roots, and gradually undermine and disentangle them. When quite loosened from the soil, proceed as speedily as possible to carry the tree to the house. If no very large and heavy one, a man should take the stem on his shoulder, and two men should support the branches; the roots will take care of themselves. Big trees should have their stems wrapped round with a bit of carpet or matting, and a stout stake passed under it, by which two men can readily carry it shoulder-high. Having placed the tree in position, with the stem at the base 6 inches distant from the wall, comb out the roots with the fingers, removing badly-wounded ones, and smoothing the broken ends of others, and proceed to fill in with the finer portions of the soil, laying the roots at various levels to within 4 inches of the top. The planting must be made very firm as it proceeds; and with this intent, a heavy watering may be afforded when the work is about half-finished, and at the conclusion of the job. The workman should see that the roots radiate fairly regularly round the stem, in order that they might draw nutriment from the whole mass of soil, and not from a portion of it only. On fine afternoons apply the syringe on the foliage twice and thrice daily, endeavouring to revive it as much as possible, and thus promote root-activity. The house should be kept rather close, and the roof closely shaded during the hours of strong sunshine, and the paths and border damped down.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Heat-loving species.—Examine these plants frequently, and any that have made up their growth sufficiently, but may appear likely to commence a secondary growth, should be removed to a lighter and more airy house. The late-growing species will need to be encouraged some time longer. As each batch of *Dendrobiums* is removed from the south side of the East Indian-house, the vacant space may be filled with the most forward of the deciduous *Calanthes*. Arrange the plants so that each new pseudo-bulb may obtain plenty of light, and elevate them as near to the roof-glass as possible. During full sun at mid-day, afford a thin shading only, and the plants should be exposed to the early morning sunshine, and again in the afternoon. After a few weeks, no shading whatever will be required. The

plants will require water more frequently than usual; and liquid manure, if afforded alternately, will be beneficial until the flower-spikes have become a few inches high. *Calanthes* of the *Regnieri* section now growing freely, would not be benefited by an extra amount of direct sunlight, but as the *C. vestita* section is moved out, these may be arranged more thinly in the same place. If there be but limited stage accommodation, the smaller plants may be temporarily suspended in baskets or pans. Plants of *Peristeria elata* (the Dove Orchid) may receive more sunlight.

Odontoglossums.—The present is the best season of the year to overhaul the cool-house *Odontoglossums*, and to repot those that are in need of more room or of fresh compost. Such plants as *Odontoglossum Halli*, *O. triumphans*, *O. luteo-purpureum*, *O. Pescatorei*, *O. nevadense*, *O. nœvium*, *O. polyxanthum*, *O. gloriosum*, *O. tripudians*, *O. cristallinum*, *O. excellens*, *O. Andersonianum*, *O. Ruckerianum*, *O. sceptum*, *O. Wilckeanum*, *O. hystrix*, *O. mulus*, *O. Wallisii*, *O. aspidorhinum*, *O. cuspidatum*, *O. elegans*, *O. cirrhosum*, *O. hebraicum*, *O. Coradinæi*, and the numerous varieties of *O. crispum* which flowered early in the year, are now growing freely, and the new breaks will soon be making a number of young roots, therefore the fresh rooting material is needed now. Previous to doing this, however, it is important that water should be withheld from the plants for a few days, that the roots may become drier, and less susceptible of injury. A suitable compost consists of freshly-gathered sphagnum-moss and good fibry peat in about equal proportions. Some growers use three-parts sphagnum to one of peat with equally good results. To either compost may be added a moderate quantity of small crocks and charcoal. If the sphagnum-moss is very wet, squeeze the water out of it, and thoroughly examine it for slugs and snails, or these creatures may do great injury. The pots used should be in proportion to the sizes of the plants, overpotting being in all cases guarded against. The usual crocks may be dispensed with in favour of the bracken rhizomes for drainage purposes. *Miltonia vexillaria* should be treated like the *Odontoglossums*. Pot moderately firmly, keeping the base of the bulbs just above the rim of the pots, and when the operation is completed, prick in a few living heads of sphagnum-moss over the surface. It is not necessary to repot large, healthy specimens annually, but if the soil has become sour and decomposed, remove the same down to the drainage, and supply fresh materials. Some old plants may be in bad health, and any such should be turned out of their pots, and when thoroughly cleansed, placed in pots as small as it is possible to get them into. Such weak plants, after potting, should be placed together at one end of the house, where they may be kept, not necessarily warmer, but rather closer than the other plants, and similarly treated to newly-imported pieces. A critical period with *Odontoglossums* is immediately after re-potting; as at that time it is an easy matter to afford too much water, thereby causing the roots to decay, and many leaves to be lost. For a month or six weeks afterwards the greatest care is needed. Syringe well between the pots morning and afternoon, and admit as much fresh air to the house as possible, especially when the outside temperature is about 50°. Until the plants have become re-established, protect them from strong sunshine.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Parsley.—In order that the plants of the spring and summer sowings may throw up fresh growth, a certain number of the rows or of the plants should be cut over at a point a little above the heart leaves. The latest sown Parsley in open borders, cold frames, and boxes should be thinned to about 1 inch from plant to plant. Let all beds of the herb be kept free from weeds and decaying and dead leaves.

Celery and Celeriac.—In many gardens on light porous soils it may be found necessary to afford the fully or partially earthed-up rows a copious watering. It is prudent before earthing-up rows of late Celery to allow the plants to grow nearly to their full size before any earthing-up is done, and then gradually to carry out the process. At all times avoid earthing Celery plants unless the leaves and stalks are dry. Beds of Celeriac should be cleaned and lightly hoed, and all suckers removed; and then copiously water the bed or whenever the soil is found to be getting dry. Celeriac, the growth of which was checked by lack of water at the beginning, frequently becomes useless

from the tubers bursting on water being applied, or from heavy rain; and the tuber is liable to become hollow if an excessive amount of nutriment be applied to the plants.

Sorrel.—Plants raised in the spring from seed may now be planted out in rows 18 inches apart, and 12 inches between the plants; good late crops being obtained from planting at this season. When Sorrel plants stop growing, and their leaves are mature, cut them off, and afford the plants a dressing of decayed manure, and the next crop of leaves will be large, succulent, and early. Remove the flower-stalks from old plants, and stir the soil between the rows with the hoe.

Carbiflowers.—When the young plants appear, dust them over with dry-soot or lime, to prevent slugs devouring them. Make another sowing on a south border, sowing in drills half-an-inch deep, and 8 inches apart; and afford the drills water before sowing. Early London or Dwarf Mammoth are good varieties for present sowing.

Vegetable-Marrows.—All plants that have produced fruits in quantity should be copiously afforded water, and if the plants show signs of exhaustion, guano-water will resuscitate them. Plants which are carrying a heavy crop may also be afforded liquid-manure. When the growth is very dense, thin it out, in order to let in the sunshine, or but few fruits will set.

General Work.—Let the hoe be in daily use amongst growing crops, a crumbly surface being the best mulch and conservator of moisture in the soil. Weeds now grow apace, and should be kept under at all costs. Prepare manure for the land, and get materials duly sweetened and prepared for the making of hot-beds.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Carnations.—If the layers of tree Carnations are found to be well rooted, pot them off at the earliest opportunity, using a compost consisting of good fibrous loam two parts, leaf-soil one part, and one part consisting of old mortar or plaster and coarse silver-sand. The pots may be 48's, which should be made quite clean and be well drained. After potting let the plants be put into a cold frame, and keep them close for a few days, applying water with the syringe morning and afternoon, and after the first application of water to the roots use the water-pot cautiously till the plants begin to grow freely; and should the plants show signs of distress during bright sunshine, apply a light shade during the hottest part of the day, rather than afford water.

Cyclamens.—Seed may now be sown in well-drained seed-pans, on a mixture of light loam, leaf-mould and sand in about equal proportions, pressing the soil moderately firmly, and affording water sufficient to wet it throughout some hours before sowing. Place the seed-pans in a house having a minimum degree of warmth of 58°, covering each with a sheet of glass and a sheet of dark-coloured paper. *Cyclamens* which are making good growth may be afforded frequent applications of clear stable or cow-stall manure-water, varying this with some approved artificial manure. These aids to growth should always be afforded in a very mild form. Keep the plants free from aphids and Thrips. Remove all flowers as they show, and admit plenty of air, but avoid cold draughts; and keep the materials moist upon which the plants stand, by syringing amongst the pots.

Zonal Pelargoniums.—Plants plunged outdoors should be removed to a light, airy house, and the nearer they are to the glass the better they will bloom, and the finer will be the colour of the blooms. The warm, bright weather has tended to give firmness to the growth, and stockiness to the plants, so that plenty of flowers may be reasonably expected. Water should be carefully afforded when the plants are housed, for if overdone at that time, growth will be too soft to flower satisfactorily. A batch of the latest plants may be stood in a cool frame, so as to form a succession to the earlier ones, admitting all the air possible to them when the weather permits, and never allowing the air to become stagnant or very humid.

Lilium longiflorum var. Harrisii.—These bulbs should be potted without delay, the larger-sized ones being placed in large 32's, and the smaller in small 32's, in a mixture of pasture-loam, leaf-mould, and sand, together with a fair portion of rotten-dung. Having potted the bulbs, that is, covered them with an inch of soil, place them in a cold frame, and cover the pots with cocoanut-fibre refuse. *L. longiflorum* and *L. candidum* may be treated in the same manner.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Strawberries.—Old beds which it is proposed to retain for another season should be again relieved of any fresh runners that have formed, and afterwards hoed between the rows, to destroy the small weeds. A warm and dry day should be chosen for this kind of work, that the weeds may sooner perish. It may, however, be necessary to rake the beds over a few days afterwards, and thus prevent any of the weeds becoming re-established. A good dressing of farmyard-manure should then be given as a mulch. Strawberries form numerous surface-roots, and these must not be disturbed by digging among the plants; but the manure, if put on now, will decay, and its ingredients be washed into the soil by the autumn rains, and any rough portions that remain may be raked off in the spring. New plantations of Strawberries will also be much benefited if afforded a similar dressing, which, in addition to feeding the plants, will serve to keep warmth in the soil and the plants will be less liable to injury in a severe winter. Remove runners from young plants as soon as they are seen, or they will rob the chief crowns, and next season's crop will be the poorer.

Weeds.—Let the hoe be kept going in all plantations of fruit-bushes as by doing this the land will be kept moist, and free it from weeds of all kinds.

Wasps.—Traps baited with waste fruits should be set against the walls where Plums, Peaches, Figs, &c., are ripening. Nests should also be sought for towards evening, marked with a twig, and then destroyed when the insects are within, that is, about 8 p.m. at this date. If gas-tar be poured into the entrance or entrances to the nest, and these are then closed with earth, there will be no necessity to dig out the nest afterwards.

THE APIARY.

By EXPERT.

Feeding-up.—A good deal of care is sometimes needed when commencing to feed up those stocks which have been largely deprived of their store of honey, especially when a good number of very strong stocks and some weak ones are on hand. The excitement caused by feeding makes bees inclined to prowl about weaker hives, and robbing sometimes results. In starting to feed (especially with weak stocks), afford the first bottle of syrup at dusk, and reduce the width of the entrances to an inch or less. If the least sign of robbing is observed, on no account should precautions to check it be neglected. Let hives be opened no oftener than is really necessary; give the required amount of food rapidly, a quart or more at a time, so as to disturb the hive as seldom as possible, and get all feeding completed before starting to clean or straighten up any of the hives. The latter portion of the work should always be done last, and cool weather is a suitable time for doing it. The food at this time should not be of a watery kind, but let the syrup be well made, with 10 lb. of sugar to 5 pints of water, boiled gently for a couple of minutes. This quantity given after the second week of the present month will safely winter a stock that has 5 to 6 lb. of stores in hand when feeding begins. Carbolic acid will be found useful in helping to check robbing, if smeared on the front of the hives attacked.

Re-queening.—In a well-ordered apiary there will be no queenless hives on hand now, but there will be old queens or unsatisfactory ones which it is desirable to remove; and young queens at this season being generally plentiful (what with weak swarms and the driven bees of cottagers), it is easy to place them at the head of stocks in lieu of those that are removed. In re-queening hives, first take the precaution to secure the old queen and a few bees in a combed section, where she may be kept until the safety of the new queen is assured.

Preparing for Winter.—Bee-keepers who already possess the full number of stocks they desire, should not trouble themselves with nursing very weak hives. Let them see that all their stocks are strong, headed by young and vigorous queens, and that they have abundance of natural food. Should the latter not be available, well-made sugar-syrup should be given rapidly for a few days, or rather nights, during this month. For those who do not possess a "Rapid" feeder, a large screwtop jar holding 4 or 5 lb. makes a very good substitute, the lid being pierced with small holes, and inverted over the feed-hole. Even the screwtop jar may be dispensed with by using a 4 lb. glass jam-jar costing about 1d., if it is filled quite full, and a piece of muslin tied over its mouth.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.
Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, SEPT. 14	Royal Caledonian Horticultural Society's Exhibition in the Waverley Market, Edinburgh (2 days).
MONDAY, SEPT. 12	SALES. Dutch Bulbs, at Protheroe & Morris' Rooms. Thirtieth Great Annual Unreserved Trade Sale of Pot-plants, at the Dyson's Lane Nurseries, Upper Edmonton, by order of Mr. H. B. May, by Protheroe & Morris.
TUESDAY, SEPT. 13	Great Annual Sale of Heaths and Greenhouse Plants, at the Burnt Ash Road Nurseries, Lee, S.E., by order of Messrs. B. Maller & Sons, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY, SEPT. 14	Dutch Bulbs, Liliun Harrisii, &c., at Protheroe & Morris' Rooms. Annual Sale of Winter-flowering and other Plants, at the Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris.
THURSDAY, SEPT. 15	Thirtieth Annual Trade Sale of Stove and Greenhouse Plants, at the Brimsdown Nurseries, Green Street, Enfield Highway, by order of Mr. John Maller, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY, SEPT. 16	Seventeenth Annual Trade Sale of Heaths, Roses, &c., at the Longlands Nursery, Sidcup, by order of Messrs. Gregory & Evans, by Protheroe & Morris. Imported and Established Orchids, at Protheroe & Morris' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—58°.

ACTUAL TEMPERATURES:—

LONDON.—September 7 (6 P.M.): Max., 78°; Min., 62°.
PROVINCES.—September 7 (6 P.M.): Max., 70°, York; Min., 60°, Peterhead, N.B.

The splitting of Fruits and Tubers.
THE cultivator has frequently to deplore the splitting of the fruit of the Pear, Plum, Melon, and occasionally of Grapes, Gooseberries, and Tomatos. It is also not rare in Cyclamen tubers. In the case of Melons and Cyclamens growing on hotbeds, the cause appears to be due to the great activity set up in a plant by means of heat, moisture, and abundant food. These cause the turgescence of the tissues, and when a check occurs from any cause, such as cold draughts of air, the removal of the plants in the case of Cyclamens from the hotbed to the glasshouse or potting-shed, the cellular tissues of the plant and tuber retain their abundance of sap, but are incapable, for the time being, of growing rapidly, and the cells at the circumference of the tuber not having the power, as heretofore, to stretch and increase in number, are burst asunder by the turgidity of the inner tissues. The same kind of mishap occurs in fruits. There has been, probably, rapid growth following a period of heat, with plenty of moisture at the root; but a cold period occurs, growth is checked, and splitting of the fruits takes place. It can be induced in the Melon by over-abundant water at the root, or the access of the roots to the materials of which the hotbed is made. The splitting of the stone in the case of the Plum and Peach may be due to similar causes, or to the plenteous application of water following a period of great dryness. And the evil would be accentuated were water afforded at a much lower temperature than the soil. The destruction of the tissues that follows the splitting of a

fruit or tuber, is occasioned by the ever-present parasitic fungi seizing upon the surfaces of the wound.

In the case of forced plants, it is very essential to maintain the bottom-heat at the proper temperature. In the case of the Grape, it is found that by allowing an outlet for the abounding sap in the Vine at the period when splitting has most to be apprehended, namely, at the final swelling, and just as the berries begin to colour, by not denuding the plant of its shoots and leafage, not affording much humidity in the air, or allowing a check to growth from any cause, the splitting of the berries is generally obviated. Analogously, if certain other fruit-trees show a liability to suffer from this malady, it would be good practice to permit almost unrestricted growth of shoots till the dangerous period is past. This need not be taken to mean that all foreright shoots, in the case of wall-trees, should be left unshortened till August, but that a goodly proportion of them be so left. And in the case of Melons, lesser restriction of growth would be a means of prevention.

National Dahlia Society.

THE exhibition at the Crystal Palace last week was generally satisfactory, and admirers of this showy garden-flower might have witnessed there a display of average extent and quality. But we were surprised to see so few visitors present on the opening day; either the date was an inconvenient one, or the Dahlia is not now regarded as an exhibition flower with the same enthusiasm as the multitude extend to the Chrysanthemum. The feature of the show most calling for remark, is the continued development of the "Cactus" section, as seen in the collections of flowers in the competitive classes. So numerous have the seedlings that give flowers of this type become, that the Society adopted a classification list, and to this are added novelties as they appear, providing they show the necessary degree of "Cactus-like" form or suggestiveness. Exhibitors in the competitive classes have to choose their varieties from this list, or they may supplement them by the addition of real novelties that the exhibitor is pretty sure will pass the criticism of the judges, but which up to date have not been officially classified. Thus the appearance of the collections as they are bunched into sprays of ten or six blooms each in the familiar fashion, has been changed to a wonderful degree in a few years. More and more have the flowers of this section become dissimilar in form to other Dahlias. The rounded petals have disappeared, the points of them are increasingly pointed and Cactus-like, whilst the form of some of them, such as Fantasy, Star-fish, Arachne, and others, is most extraordinary. Last year, the best new one of this section was Mr. WEST's Island Queen, and there were several newer ones certificated last week. The society has wisely discontinued the classes for "decorative" varieties. There was little competition in them, and they were not needed. The "show" varieties were perhaps less large than we have seen them, but in tint they were as attractive as ever. The Pompons, judged from any standpoint, are pretty and useful, and the show of them was good. The continued decline of the single-flowered varieties was again evident, notwithstanding Mr. GIRDLESTONE's praiseworthy and successful effort to raise varieties with greater attractions than any previous ones have possessed. A collection from this

exhibitor contained blooms of rich and beautiful colouring, in addition to having good form. If cultivators of single-flowered Dahlias would take care to have only the best varieties, and as Mr. MAWLEY remarked, be considerate enough to remove the seed-pods as they appear, we think they would be better pleased with them. As on previous occasions, many of the exhibitors had labelled their varieties in a very unsatisfactory manner. The names might easily be attached to each without fear of preventing a perfect view of the flower.

"BOTANICAL MAGAZINE."—The present issue, No. 645, of the new series, contains figures and letter-press descriptive of:—

Eulophiella Peetersiana, Kranzlin, already figured and described in our issue for April 2, 1898.

Rhododendron yunnanense, Franch., an erect-growing shrub; branches stout, terete, clothed with black-brown bark; subacute lanceolate leaves, 2 to 3 inches long, with mid-rib and margin covered with short sub-erect hairs; flowers corymbose terminal, white, with blood-red spots towards the base of the upper corolla-lobes.

Lobelia intertexta, a small-growing species, resembling *L. erinus* var. *bicolor*; a native of the Nyka plateau in British Central Africa.

Gallistephus hortensis, Cass., the indigenous form of the "China Aster," appears to be common in the rocky hills of northern China, in eastern Turkestan, western Tibet, and Afghanistan. The plant figured was raised from seeds supplied by Messrs. VILMOBIN, ANDRIEUX & CIE, which were obtained from the Abbé FARGES, who collected them in Sechuan. The heads are solitary, ray-florets numerous, linear, violet-blue; disc-florets numerous, of a golden yellow colour.

ST. PETERSBURG INTERNATIONAL HORTICULTURAL EXHIBITION, 1899.—We have been favoured with the following announcement with reference to the forthcoming exhibition at St. Petersburg, received by Mr. BAIFOUR from the Russian Chargé d'Affaires, and by him transmitted to the Director of Kew Gardens, from whom we received a copy:—

"LONDRES, le 19 Juillet, 1898.

MONSIEUR LE MARQUIS,

La Société Impériale Russe d'Horticulture prépare pour l'année prochaine, du 17 au 27 Mai, une exposition à St. Pétersbourg, sous le patronage direct de Sa Majesté l'Empereur, l'administration de la section étrangère étant confiée à Mr. Fisher, Directeur du Jardin Botanique de St. Pétersbourg, auquel les exposants des différents Pays sont priés de s'adresser directement pour les informations indispensables.

Les objets exposés passeront la frontière en franchise de douane.

Le Palais Impérial de la Tauride, où il y a plus de 2,000 mètres carrés de terrain couvert, a été mis à la disposition des exposants et, en outre, en cas de nécessité des tentes et autres locaux seront aménagés en leur faveur.

Le Gouvernement Impérial fera parvenir sous peu des renseignements plus précis sur les privilèges accordés aux exposants, ainsi que des programmes imprimés de l'exposition.

En portant ce qui précède à la connaissance de Votre Excellence, je m'adresse à son obligeance accoutumée, en la priant de bien vouloir faire prendre les mesures nécessaires en fin de propagée parmi les spécialistes anglais les nouvelles de ces préparatifs ainsi que, le cas échéant, de vouloir bien nommer des commissaires spéciaux qui seraient chargés de gérer la section britannique et de la mener à bonne fin.

J'ai l'honneur, &c.,

(Signé) P. LESSAR.

Son Excellence,
Monsieur le MARQUIS DE SALISBURY, &c."

Her Majesty's Government have decided not to be officially represented at the exhibition.

Mr. JAMES H. VEITCH has been appointed Commissioner for Great Britain and Ireland for the third International Exhibition of Horticulture, organised by the Russian Imperial Horticultural Society, to be held at St. Petersburg in May, 1899. Schedules may be obtained from him on application at the Royal Exotic Nursery, Chelsea.

DR. MORRIS, lately Assistant Director of the Royal Gardens at Kew, the newly-appointed Commissioner of Agriculture for the West Indies, leaves this country for Barbados by the Royal Mail steamer *Orinoco*, from Southampton, on the 21st inst.



[From a Photograph by K. H. Preston.]

THE MORRAL PUBLIC GARDENS, PENZANCE.

YORKSHIRE NATURALISTS' UNION.—The one hundred and forty-first meeting of this body of naturalists will be held at East Keswick for Harewood Park, for a fungus foray, on Saturday and Monday, September 10 and 12, 1898. The business arrangements for this meeting have been made by Mr. W. DENISON ROEBUCK, F.L.S., and Mr. J. WADDINGTON, of Leeds; and all communications respecting accommodation and conveyances must be addressed to Mr. ROEBUCK. Communications with regard to the scientific business of the Mycological Committee to be addressed to Mr. CROSSLAND, its Secretary. The district for investigation includes the magnificent woods on the Harewood estates, the avenue of fine trees which borders 2 miles of the road from Harewood to Collingham, and various smaller woods about Scarcroft, East Keswick, Woodhall Bridge, &c. Permission has been kindly granted by the Earl of HAREWOOD for his estates to be visited on Saturday and Monday. Mycologists are cordially invited to attend and take part in the investigations. It is expected that most of the members of the Yorkshire Mycological Committee will be present. Monday's proceedings will not be exclusively mycological, and it is hoped that naturalists in general will attend, the fauna and flora of Harewood Park being but imperfectly known. The Old Star Inn, East Keswick, will be head-quarters throughout. Members intending to stay the week-end must inform the Hon. Sec. at 259, Hyde Park Road, Leeds. The fungi collected will be arranged on tables in the large club-room of the Inn. Consignments of fungi from Lincolnshire and other parts of Yorkshire may be sent to Mr. CROSSLAND, at the Old Star Inn, East Keswick, *via* Leeds, if by post; or to Bardsey Station, if by rail. Consignments should be labelled with the name of the locality and that of the collector, and be packed with moss or grass (not paper).

THE ROYAL HORTICULTURAL SOCIETY'S FRUIT SHOW.—A correspondent, well versed in the duties of a judge at horticultural exhibitions, and necessarily with the difficult and doubtful points connected therewith that are constantly occurring, which might not occur were schedules as clear as they might be, writes in reference to the forthcoming Royal Horticultural Society's Fruit Show as follows:—

"The Schedule of Special District County Prizes for Fruit, recently issued by the Royal Horticultural Society follows upon the lines of the schedule of prizes prepared for the Great International Fruit Show which was to have been held in London in 1892, but which fell through for lack of support. Such a desirable division of the country into counties was carried out with decided success in the case of the fruit show held by the Fruiterers' Company in the Guildhall of the city of London a few years previously. In the case of the Special County Prizes recently issued by the Royal Horticultural Society it is not so definitely stated that the six dishes of Apples or Pears are to be the *bona fide* growth of one individual or representative of the grouped counties. I infer it is the former; still, this is not set forth as distinctly as it is desirable it should be, and it is likely to become one of those doubtful points which provoke a great deal of correspondence which might be avoided. Then, how many fruits are to form a dish? Possibly it may have been thought by the compilers that the number of fruits constituting a dish is to be the same as in the other classes in the schedule; but as many intending exhibitors may not see the Schedule of the Fruit Show it would have averted contention to have given the number constituting a "dish." Some other conditions are open to criticism, but the two points I have alluded to appear to me to be of importance; and I hope that my note will lead to some clearer statement on the part of the Society."

TEA, COFFEE, AND CINCHONA CULTIVATION IN INDIA.—From a volume of *Agricultural Statistics of British India* we learn that the number of acres under Tea has increased from 283,925, and a production of 71,525,977 lb. in 1885, to 433,280 acres, and a total production of 156,426,054 lb. in 1896. Coffee does not show the progressive cultivation of the former. In the year 1885 the acreage area under Coffee was 237,457, and the yield 34,959,902 lb.; and in 1896, 289,084 acres only produced 26,086,902 lb. As regards Cinchona, the number of trees under cultivation had decreased since 1885, the quantity of bark collected in 1896-97, viz., 1,491,566 lb., being the smallest obtained since 1889.

THE HARDINESS OF CYCLAMENS.—Most gardeners regard *Cyclamen persicum* and its varieties as being too tender to risk out-of-doors in cold frames after the end of the present month. We read, however, in the last issue of the *Deutsche Gärtner Zeitung*, of a nurseryman in Koswiz, in Saxony, who, owing to lack of space, left a quantity of young plants in a cold frame exposed to 25° to 30° of cold, Fahr., without any more protection than that afforded by the lights, and they were thus exposed the whole winter, being considered useless. In the spring these plants were, to the astonishment of the owner, fresh-looking and healthy, and the great proportion of them furnished small, saleable flowering stuff. Had these plants been brought into a glasshouse after freezing, the whole of the blossoms would have probably decayed, or been crippled.

THINNING FRUITS.—The following striking results of thinning the over-abundant fruits of seven trees of the Peach, and one each of a Pear and Apple, are recorded in the *Fourth Annual Report of the Fruit Experiment Station of Ontario*. They afford ample reasons for a practice now becoming greatly more common in our own country than was the case a quarter of a century ago:—

Results were obtained at Maplehurst in 1897 by Mr. L. Woolverton.

Variety.	Date.	Quantity removed from one tree.	Hours thinning one tree.	Tree thinned.	Tree not thinned.	Yield in 12 quart baskets.
<i>Peaches.</i>						
Alexander 2 trees compared	June 21	1	2	11½	*9½	
" " " "	June 23	1	1	8	*4½	
Honest John... " "	" "	1	1	1	1	
Centennial ... " "	" "	1	1	17	5	
Hale's Early... " "	" "	1	1	9½	*7	
Waterloo ... " "	" "	1	1	15	5½	
Crawford ... " "	" "	1	1	12	2	
Early Rivers... " "	" "	1	1	18½	*9	
<i>Apples.</i>						
Spy 2 trees compared	July	1	...	19	\$13	
<i>Pears.</i>						
Clapp's Favourite ... 2 trees compared	July	...	...	11	15	

* Loss from rot. † Increased size of fruit.
‡ Extra size and clean. § Thinned too late.

MR. H. DAVIES, until recently inspector of the Royal Botanic Garden, Calcutta, has been appointed by the Indian Government to the post of Superintendent of the Government Garden at Allahabad, in succession to Mr. J. PHILLIPS, who retires after thirty years' service. Mr. A. C. HARTLESS, Curator of the Government Cinchona plantations, Mungpoo, succeeds Mr. H. DAVIES at Calcutta.

A SINGULAR CAUSE OF THE DEATH OF A GARDENER.—An inquest was held at "The Chequers" inn, Horley, Surrey, last week, into the circumstances attending the death of RICHARD WORSFOLD, gardener, of Horley, lately in the employ of Dr. MUTER, of the Chatelet, Horley. The wife of deceased stated that a day or two previously, when he went home to dinner, he said he had run a nail into his foot. He had trodden on a board, and a rusty nail had run into his foot. He showed her the hole in his foot. He went back to work, but at 4 o'clock in the afternoon he returned to his home, and said his master had sent him back because his foot was so bad. He complained of pain extending to his ankle, and his foot was very much swollen. A few days afterwards he was taken with spasms and died. The medical evidence was to the effect that death had been caused through tetanus (lockjaw), owing to septic poisoning in the wound in the foot. Deceased's employer said the microbe of tetanus was often found in manured soil. The jury returned a verdict of death from misadventure.

PROFESSOR DR. BREFELD has been appointed Professor of Botany in the University of Breslau, in succession to the late Dr. FERDINAND COHN.

THE PEOPLE'S PALACE HORTICULTURAL (SEPTEMBER 1, 2, 3).—Time was when Dahlias were grown in front gardens in the Mile End, Whitechapel, and Bethnal Green Roads; when many a forecourt garden was gay with them, and florists who grew them for sale had little nurseries by the sides of these great highways. Much of that has passed away, but Dahlias are still grown, though not without difficulty, in many a back garden, and blooms appear which are sufficiently good to find a place on show-boards in the Queen's Hall of the People's Palace. The exhibition under notice was very largely a show of Dahlias; and blooms came both from the more open country beyond Bow and Stratford, from gardens in Clapton, Leyton, Forest Gate, and from Walthamstow, all of which neighbourhoods have year by year to sorrowfully resign tracts of grassland to the requirements of a growing population. But they are more open and breezy than the smoky parts west of Stratford, and so the cultivators of Dahlias show in classes set apart for them. The drought, added to the scarcity of water, had told upon the plants, and from lack of moisture the back petals were fading before the flowers could develop their centres. But despite the season, a very satisfactory progress in quality could be noted, and when the tables were filled with competitive exhibits, a very pretty show indeed resulted. The Cactus type appears to be the favourite flower with the East-ender, and he affords water when he can obtain it, and hunts for vermin without wearying. When one looks into some of these small back gardens, darkened by factory-walls and shut in by dwellings, only wonder can be experienced that such good blooms are produced. There were Lilies in pots, very satisfactory representatives of *L. auratum* and *L. speciosum*; there were Asters in pots, cut flowers in pretty bunches, and plants grown by children in plenty. One or two Fuchsias, grown in living-rooms, deserved a medal from the Royal Horticultural Society. Every well-wisher of his kind has reason to desire that a full measure of success may attend the work being done by the People's Palace Horticultural Society.

JOSHUA BROOKS, son of SAMUEL BROOKS, the oldest florist in Chicago, who, together with his father, built the first glasshouse for plant cultivation in that city, died on July 26, at the age of eighty years.

PUBLICATIONS RECEIVED.—*Die Natürlichen Pflanzenfamilien*, Nos. 178 and 179, and the contents of Parts II. to IV.—*Journal of Botany*, for September, 1898. The number contains an account of a new genus of Ericaceæ from Angola; critical notes on some species of Cerastium, and a list of the more remarkable discoveries of new and rare Hepaticæ in Inverness-shire.—*Nature Notes*.—*Journal of the Society of Arts*, No. 2,389, vol. xlv.

THE MORRAL GARDENS, PENZANCE.

[See supplementary illustration].

SITUATED on a slope facing Mount's Bay, and consequently having a southerly aspect, small in size, and the public property of a town which mainly subsists on its attractiveness to visitors, one would naturally expect this garden to be a little gem of beauty, full of luxuriantly-growing plants.

Instead of this, however, anyone visiting Penzance in July will find that the Morral Gardens consist mainly of free-growing Privet, numerous beds of small burnt-up Pelargonium, and—most obvious of all—infinite bare earth. As there are plenty of full-grown trees, and a considerable expanse of lawn, the comparative newness of the grounds affords no adequate explanation of the poor gardening displayed.

The most interesting sight in the gardens in the summer is that of the really splendid Hydrangeas.

Some of these occupy a part of the margin of a little pond, and are most effective. However, even this success is not allowed to be a complete one, for the rest of the pond is margined by rows of poorly-grown Pelargoniums and the like.

A very pretty and bright effect is given by a mass of dwarf Nasturtiums, bordered by Marguerite Carnations, in full flower. With these exceptions the gardens have little to show in July either of beauty or interest—for it is hard to apply either epithet to some large and apparently well-grown Palms and Tree Ferns in tube, as these are almost hidden from view by an enclosure of black netting.

A so-called Rose-bed—which consists mainly of almost leafless sticks and bare earth—called forth from my companion the remark that “it is enough to make one swear never to grow a Rose again.” A bed of Carnations is little better—bare earth occupying more than half the bed. Most of the herbaceous plants in the shrubbery-borders appeared but poorly grown. The very ugly building (library?), which occupies a prominent position in the grounds, should have its walls hidden and ornamented by climbers in variety as soon as possible. The gardens offer every facility for the proper cultivation of almost every description of open-air plants—water-lovers, bog-plants, rock-plants, florist's flowers, herbaceous perennials, climbers, &c.—and it is to be hoped that those in authority may recognise that the true uses of a public garden are to afford sensations of repose and successional beauty, and to serve as a model of gardening at its best. *Harry Roberts.*

BOOK NOTICE.

A YEAR'S WORK ON A KENTISH FRUIT FARM,
by a Practical Man. (Published by G. Bunyard & Co., The Royal Nurseries, Maidstone.)

THE horticultural reader might suppose that of works on fruit culture for market we have had of recent years more than enough; we can, however, cordially recommend this small work of 82 pp. to the vegetable and fruit cultivator on a large or small scale, as containing a great deal of useful information, combined with much worldly wisdom, and a thorough knowledge of the metropolitan markets.

The hints on marketing all kinds of produce are invaluable, and were cultivators in general, large as well as small, to take them to heart, we should hear greatly less of the complaints that produce fetches, as a rule, very low prices. The author has practical knowledge of the constantly changing and yet necessary work on a fruit-farm; a thorough acquaintance with vegetable cultivation on an extensive scale, combined with a close grasp of market ways and prices. At the end of each week's diary is appended a list of the prices obtained for hardy fruits, Potatoes, and the chief vegetables in season during the entire year 1897.

At the end of the book a list of the best-paying market fruits is added, giving the prices obtained by selling direct from the tree in the case of varieties that are not stored. The articles originally appeared weekly in *The South-Eastern Gazette*.

HOME CORRESPONDENCE.

HABENARIA CONOPSEA?—It was stated by Hausmann, in his *Flora von Tyrol*, 1854, that *Gymnadenia conopsea*, R. Brown, varies very much as well in form as in colour; even a form without a spur is mentioned. Should not the plant found near Arisaig be one of these forms of *Gymnadenia conopsea*? *O. F., Lehenhof.*

SUMMARY OF WEATHER-NOTES DURING AUGUST, 1898, AT THE ROYAL GARDENS, WINDSOR.—As showing the extraordinary drought of the present year up to date, and the phenomenal heat of the past month, I enclose a leaf from our weather register, where you will notice that the rainfall for the eight months ending with August 31 amounted to only 9.03 inches, the average here for eight months being about 16 inches—a little more than half the usual

quantity. The spring and summer crops in the vegetable quarters have fared fairly well; but as for autumn and winter crops, I scarcely know how we shall get on. Throughout the south of England there must, in any case, be great scarcity, and if rain do not soon fall, an absolute dearth of many things. The summary is as follows:—

A very hot and dry month, tropical weather prevailing; continuous and brilliant sunshine, 100° and over being registered in sun on 10 days, 80° and over in the shade on 9 days; very hot and sultry, occasionally with thunderstorms, but, as usual, this district escaped the full force of storms. Sunshine (more or less) was registered each day; a cold wave, with squally E. winds, passed on 6th, 7th, and 8th inst., with some rain: Sunday, 7th, very dull and cold, with drizzling rain; finer evening. Rain fell on 9 days during the month.

Max., in sun, 109° on 14th; ditto, Solar Ther. (in vacuo), 135° on 20th.
Max., in shade, 86° on 22nd; min., 38° on 31st.
Rainfall, August, 1898 ... 1.07 inches.
1897 ... 2.23 „
Average rainfall, August (Windsor) ... 2.50 „
Total rainfall, for 8 months ending Aug. 31, 1893 = 9.03 ins.
1897 = 16.24 „
Average „ „ „ „ „ about 16.00 „

—O. Thomas.

THE RAINFALL AND WELL-SPRINGS.—The rainfall for the month of August just ended, according to the rain-gauge of Sir John Lawes, at Rothamsted, Hertfordshire, is 1.21 inch, being the result of twelve rainy days. This is 1.74 inch less than the average fall for August extending over a period of twenty years, and is equal to a deficiency of 175 tons of water on each acre of land. The total rainfall for what is called the harvest-year, that is the twelve months from September 1, 1897, to August 31, 1898, is 19.5 inches, the average for twenty years at Rothamsted being 29.6 inches, consequently in this harvest-year the crops have experienced a deficiency of a little over 10 inches of rain, equal to 1020 tons of water per acre. In the previous harvest-year, 1896-7, there was measured at Rothamsted 37½ inches; this year, therefore, shows a deficiency of 17½ inches of rain compared with last year. In the present harvest-year the months of December, 1897, and May, 1898, are the only months that have recorded over-average rainfalls, each of the other ten months showing a deficiency. It is little to be wondered at, therefore, that the well-springs of water in this neighbourhood are low. A well near Sir John Lawes' laboratory, of which measurements of the depth of water are taken from time to time, and from which no water is drawn for use, has shown the following results:—

May, 1897,	11 feet 4 inches of water.
July „	7 „ 7 „
August „	6 „ 8 „
September „	6 „ 0 „
November „	4 „ 2 „
December „	4 „ 2 „
January, 1898,	3 „ 8 „
March „	3 „ 2 „
June „	2 „ 2 „
August „	1 „ 5½ „

Thus at the beginning of May, 1897, the depth of water was at its highest, viz., 11 feet 4 inches; from that time there has been a gradual decrease in the depth of water, and at the present time the depth of water is 17½ inches only, a drop of 62½ inches since August, 1897. *J. J. Willis, Harpenden.*

THE NEW FLOWER GARDENING.—The article on p. 156 on the “Flower Gardening at Regent's Park,” is of quite exceptional interest to folk in the North, who do not often get a chance of seeing London gardens. The difficulty which confronts all cultivators of herbaceous borders is an old one. If you are to include all your favourites you must include them not only in their beauty, but in their raggedness and decay; and the longer the season in which you wish to enjoy the border the greater the difficulty. So some arrange their borders to march more or less with the year, having one portion in full beauty, while the rest is either immature, in which case, however, it is often possessed of an interest which comes very near to beauty; or it is over, and frankly displeasing; others patch up with bedding-plants and annuals, and try to produce a thin sort of beauty over the whole. To do things in the radical way in which the Regent's Park people seem to do them is doubtless beyond the purse of most of us; but I am sure there are very many people who would be glad to have a small border in some favoured position always filled with the best things of the season, and never becoming ragged. I therefore hope that “B.” will give us details of the methods by which this desirable result is obtained. The point is, that we have generally believed that to get the best results with certain plants, *Eryngiums*, *Papavers*, almost all the

Boraginæ, and hosts of tap-rooted plants, deep-digging and deep-rooting were necessary, while the attempt to move not only these deep-rooting subjects, but tender-rooted plants like bulbs, just when they were coming into and going out of flower, and all through the summer months, would have been thought a most rash proceeding. How is it done? Are all the plants grown in pots, or are tap-roots and thong-like roots by some means prevented? Or is it possible to dig down 3 or 4 feet, and move such plants without their knowing it has been done? If “B.” will explain this matter, I, for one, shall be much obliged to him. *K.*

RUDBECKIA BICOLOR SUPERBA.—This, which was distributed this season as a novelty, has sometimes been shown in collections of hardy herbaceous perennials, though it is classed as an annual. Such forms as *R. amplexicaulis*, *bicolor*, and *texana* are found in German seed catalogues, and described as annuals; and the new form is a selection from *bicolor*, which has yellow florets with a black centre. In the case of *bicolor superba*, the disc is brown, the ray florets yellow, with large, dark brown spots round the disc. Anyone exhibiting the plant among hardy herbaceous perennials runs the risk of having his exhibit disqualified. It may be raised from seeds sown in the spring; it then blooms the same year, that being the apparent duration of its existence. What is *R. bicolor*? Does it represent a true species, or is it simply a garden variety? *R. D.* [According to *Index Kewensis*, *R. bicolor* is a species. *Ed.*]

SCHEDULE-MAKING AND JUDGING.—From the many complaints this season, it is clear that horticultural societies' committees have not yet availed themselves of the help they might obtain from the Royal Horticultural Society's code of rules. I always make a point of recommending this shilling pamphlet to any society I come in contact with, and find that some do not even know such a guide exists. The trouble often arises over the word “varieties” being really meant to signify “kinds.” The other day, when judging at a rather extensive exhibition, the schedule was much at fault, asking for distinct varieties (twelve bunches) of herbaceous flowers, ditto annuals, ditto with specimen plants, and so on. Strange as it may seem, in this same schedule the fruit classes specified distinct “kinds,” and here an exhibitor of a collection staged two varieties of Grapes, and was necessarily disqualified. The drafting of the Aberdeen schedule mentioned by “M.” was rightly styled idiotic, and this for a “Royal” show, too. The award of the “ducal judges” mentioned by “D.” on the same page is most absurd, and in such an instance the 3rd prize competitor would have been quite right had he appealed to the committee against the decision. *H.*

MONTBRETIAS.—Your correspondent, “H. T. Martin,” writing in your issue of August 27, p. 166, on Montbretias, says:—“The cultivation is very simple,” but he then proceeds to give directions, which if carried out where many are grown, would involve much unnecessary labour, and take up space required for other plants, and some would-be cultivators of these pretty plants might be discouraged. My experience is that *M. crocosmiflora* and *M. Pottsii* are quite hardy in the south of England. [Quite so. *Ed.*] Some fine masses which were lifted and transplanted last November, some of the bulbs lying on the ground at that time for several days exposed to frost not being injured, for the plants have thrown up flower-spikes 3½ feet high. These bulbs have braved the winter for several years without being in any way protected. It is advisable to transplant them every second year, well trenching and manuring the ground, otherwise the bulbs increasing so quickly become a mass of small growths, and afford few flowers. South or west aspects are best for the plants, which should be planted in lines or beds, placing the bulbs 6 inches apart. *Montbretia crocosmiflora*, which is a hybrid between *M. Pottsii* and *M. aurea*, is one of the best for out-door cultivation. *T. F. Conway, Ham House, Richmond.*

TOMATOS.—In reply to “C. J. P.'s” enquiry, p. 188, respecting the successful cultivation of Tomatos in a house with Melons, I may say that here I grow a great many Tomato plants under glass, and apart from the houses devoted to their sole use, I put plants at the lighter end of vineries, in vacant spaces in the Peach-house, or in any spot in which they can get plenty of sunshine. I have grown them very successfully in this manner; they receive the same kind of treatment as that afforded the permanent subjects in these houses. I usually fertilise

the flowers until the beginning of June, but after that time they generally set freely without such assistance. The several kinds of disease to which this plant is subject have given us much trouble for the last four years, but this season I have had, as yet, little cause for anxiety in this respect, as I have had to remove only two fruits with the "black spot," and the plants are free from the fungus, *Cladosporium lycopersici*, up to the present. I plant shallow, afford plenty of water at

earliest batch when swelling a large quantity of fruit; but I employed a top-dressing of old Mushroom-bed manure. I am of opinion that the discontinuance of liquid-manure, and giving a circulation of air at all times when possible, plenty of heat, and a good supply of water to the roots, have much to do with the freedom of the plants from disease. I allow each plant ample space for top-growth, as nothing is gained by thick planting. This

to be taken up this autumn. These trees are rather badly infested with brown scale, and they are literally swarming with wasps, although the remainder of the house is filled with Tomato plants. I should not be surprised if the wasps do not soon acquire a taste for the fruit of the Tomato, although up to the present I have not found any eaten by them. *R. D. Long, Wellington Hall Gardens, Lincoln.*



FIG. 54.—THE GREAT OAK IN THE HOME PARK, WINDSOR.

the roots when they are growing freely, and a little ventilation at all times, except when the wind is rough and cold. Where fire-heat is applied, an occasional damping of the surface of the beds is given in the afternoon of hot days. I mix a little lime with the soil in potting and planting. I grow them in pots, boxes, and planted out; but in the case of the two first, they are placed so that they can root through the bottoms, and unless they can do this, exhaustion soon sets in. I have applied no manure-water to the plants this season, except to the

is my experience so far; and it will be interesting to readers of the *Gardeners' Chronicle* if others will kindly describe their methods of culture and the results which follow. Many of the old notions respecting Tomato culture are being exploded, and I will give one instance. A few years ago we were told that by planting Tomatoes in fruit-houses we should not be troubled by wasps in these structures; but to prove that this is a mistaken idea, I may say that in destroying the trees in a Peach-house, two younger trees were left on the back wall,

THE GREAT OAK AT WINDSOR.

IN our Windsor Supplement, published in the *Gardeners' Chronicle*, October 31, 1874, we figured several of the famous Oaks in Windsor Great Park. Fig. 54 in our present issue represents a remarkable tree known as the "Great Oak" in the Home Park. When measured last year, its circumference at 5 feet from the ground was 36 feet. It was then only partly alive. The photograph, for which we are obliged to Mr. O. Thomas, and from which our figure has been prepared, was taken at an earlier date, but our readers will observe that it has many characteristics that age alone can give to the Oak. The figures in front of the trunk of the tree are those of John Tucker and his son. John Tucker was a lodge-keeper, late of the Royal Navy, and he served with H.R.H. the Duke of Edinburgh on board H.M.'s screw steam frigate *Euryalus*, a ship to which the Royal Duke was appointed a Naval Cadet in the year 1858.

LAW NOTES.

Re WALTER ADDISON,

SEED MERCHANT AND BULB IMPORTER, RESIDING AT 88, CHRISTCHURCH, AND 3, EAGLE STREET, IPSWICH.

THE Official-Receiver for the Ipswich District has now issued particulars under this failure, from which it appears that the debtor has filed a statement of affairs, showing liabilities expected to rank against the estate amounting to £2061. The assets include: Stock-in-trade, cost £1000, valued at £580; machinery, lease, goodwill, trade-fixtures, fittings, £250; furniture valued at £50: total £880; book-debts, good, £166; doubtful and bad, valued at £2 10s. The deficiency, after providing for the payment of preferential creditors' claims amounts to £1051. The report and observations of the Official-Receiver are to the following effect:—"The debtor, who is a seed-merchant and bulb-importer, informs me that he commenced business in Eagle Street, Ipswich, in 1874, having then a capital of about £100. He states that his necessary expenses have exceeded his profits, and he alleges his present position to have been caused through that. The books he has kept do not on the face of them disclose how or when his deficiency has arisen. A book of receipts and payments has been kept, but it has never been balanced, and it is admitted that it is incomplete. The debtor has not recently taken stock, or prepared any statement of his assets and liabilities, but he states that it is only within about a month that he realised that he was insolvent, although he admits that for some time he has been pressed by his creditors. There is a large stock of seed on debtor's premises, the value of which it is difficult to estimate. There is a lease of the premises, having seventeen years to run, at £21 per annum; fixtures are well adapted to the business, and no doubt they cost considerable sums, and also the goodwill of the business, which has been built up by a considerable expense in advertising."

SEED MERCHANTS SEIZE A WORKHOUSE FOR DEBT.

A curious seizure under a writ of *fi. fa.* obtained against the Guardians of the Kenmare Union, county Kerry, at the suit of a Belfast firm of seed merchants, in respect of a debt incurred, under the Seed Supply Act, has just been made at Kenmare. The local workhouse, and the premises attached thereto, have been taken possession of by the sheriff's officers, in execution of a debt of £103 1s. 7d., due from the

Guardians to Messrs. Cullen, Allen & Co., of Belfast, for goods supplied to the Union last spring, under the Seed Supply Act. The bailiffs retain possession of the workhouse and premises, pending a settlement of the account.

A FINE SPECIMEN OF THE CRIMSON RAMBLER ROSE.

It is not an unusual statement that such a person's specimen of this showy summer Climbing Rose possesses so many hundreds, or, in rare instances, a few thousands of buds and blooms, but we have never heard, nor doubtless have any of our readers, of a specimen with 32,000 buds and blooms. Yet this is the number counted by Mr. H. Turner, the raiser of the variety, and Mr. W. Marshall, the owner of the plant in question (Fig. 55), on one day this summer. The plant was bought and planted in October, 1892. The variety was seen, and a great future predicted for it by Mr. Marshall on the occasion of the Royal Horticultural Society's Gold Medal being awarded at an Earls Court show in June of 1892, to Mr. Turner, of the Royal Nurseries, Slough, for a plant in bloom.

This uncommonly fine seven-year-old Rose is planted in the front of a fence, but not attached to it in any way. It has grown to a length of 34 feet, and was furnished when the blooms were counted with 16 main branches, each with 50 trusses, and each truss with 40 blooms and buds.

THE BRITISH ASSOCIATION.

THE formal inauguration of this year's meeting of the British Association took place at the People's Palace, Bristol, at 8 o'clock on Wednesday, September 7. The retiring president, Sir John Evans, occupied the chair at the opening of the proceedings, and on his right-hand sat Sir W. Crookes, president-elect. Among those present were Lord Kelvin, Sir Frederick Bramwell, Sir J. Wolfe-Barry, Sir E. Fry, the Mayor of Bristol, the High Sheriff, Mr. Francis Gilton, Professor Carey Foster, Professor Lloyd Morgan, Mr. W. H. Preece, Professor Sollas, Professor Harold Dixon, Professor Ayrton, Professor Jupp, Professor Schäfer, Professor Roberts-Austen, Professor Marsh (of Yale), Professor Jastrow, Sir P. Magnus, Mr. L. W. Brabrook, Professor W. Ramsay, Professor Silvanus Thompson, Professor Rucker, Professor Hull, Professor Schuster, Professor Oliver Lodge, Dr. Macallum (of Toronto), Dr. Hicke, Sir Norman Lockyer, Sir Truman Wood, Dr. J. Scott Keltie, Mr. Howell Davies, Mr. Arthur Lee (secretary of the local committee), Dr. Bertram Ropers, Mr. Deacon, Professor R. Warrington, Professor Tylor, Professor Mascart (of Paris), Professor Meldola, Professor Lemström (of Helsingfors), Dr. H. O. Forbes, Professor Rupert Jones, Professor Poulton, Professor Viriam Jones, and Professor W. Grylls Adams.

The arrangements for the accommodation of the unusually large gathering of members were excellently devised and carried out. The People's Palace, which the committee were fortunate enough to secure in place of the Colston Hall, was just large enough to accommodate the 2000 ladies and gentlemen who attended to hear Sir William Crookes' address.

Sir J. Evans, in introducing the new president, and speaking in name of the association, condoled with the city in the loss it had sustained in the destruction by fire of the Colston Hall, and at the same time congratulated the local committee on the wonderful manner in which they had risen to the occasion and filled the gap caused by the conflagration. He also congratulated the city on the completion of the splendid monument, the Cabot Tower. This being the first meeting of the association since the gathering in Canada, he wished to express the extreme gratitude the association felt for the manner in which they were treated by both high and low in that great Dominion. He need hardly introduce his successor in the chair, for his name was known throughout the civilised world. At an early age he attained great eminence in chemistry, but he had not confined himself to chemical research, for he had experimented largely on various materials *in vacuo*, and the Crookes-tube was known throughout the world. These experiments had led to more important results than the radiometer. They might look to Sir W. Crookes as the real originator of those rays.

Sir W. Crookes, having taken the presidential chair, then proceeded to read his address, in the course of which he said:—

For the third time in its history the British Association meets in your city of Bristol. The first meeting was held, under the presidency of the Marquis of Lansdowne, in 1836; the second, under the presidency of Sir John Hawkshaw, in 1875. Formerly, the president unrolled to the meeting a panorama of the year's progress in physical and biological sciences. To-day the president usually restricts himself to specialties connected with his own work, or deals with questions which for the time are uppermost. To be president of the British Association is undoubtedly a great honour. It is also a great opportunity and a great responsibility; for I know that, on the wings of the Press, my words, be they worthy or not, will be carried to all points of the compass. I propose first to deal with the important question of the supply of bread to the inhabitants of these islands, then to touch on subjects to which my life-work has been more or less devoted. I shall not attempt any general survey of the sciences; these, so far as the progress in them demands attention, will be more fitly brought before you in the different sections, either in the addresses of the presidents or in communications from members.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 6.—The usual fortnightly meeting of the committee was held on Tuesday last in the Drill Hall, Westminster. There was not a large display of exhibits before either of the committees, and Orchids especially were few. Amongst these, however, was an extraordinary specimen of the Dove Orchid (*Peristeria elata*), from the Royal Gardens, Windsor. Awards of Merit were recommended by the Floral Committee to six new Dahlias, including three "Cactus" varieties, two single-flowered ones and a Pompon. Similar honours were gained by a decorative Cordyline named *Duchess of York*, by *Lobelia Rivoirei*, and *Helenium autumnale superba*. A First-class Certificate was awarded to *Acer Negundo elegans*. Before the Fruit and Vegetable Committee were shown three collections of fruit, and numerous novelties. In the case of five varieties of Onions, seven varieties of Potatoes and a Red Globe Beet, Awards of Merit previously recommended at Chiswick were confirmed. A seedling white-fleshed Melon named *British Queen*, of uncommonly delicious flavour, was awarded a First-class Certificate. Five Cultural Commendations were also made, and three Medals awarded. The lecture in the afternoon was upon the cultivation of Disas.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. E. Molyneux, Geo. Stevens, James J. McLeod, H. B. May, John Fraser (Kew), J. Fraser, W. Bain, H. Selfe Leonard, Jas. Walker, H. J. Catbush, J. D. Pawle, Geo. Paul, H. H. D'Ombraun, Harry Turner, and E. T. Cook.

Messrs. SANDER & Co., St. Albans, Herts, had plants of *Hemantthus multiflorus* var. *superbum*, a brilliant-coloured, improved form of the species. Also plants of *Acalypha Sanderi*, A. Godseffiana, and *Dracena Sanderiana*.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, obtained an Award of Merit for Cordyline (*Dracena*) *Duchess of York*, six pretty plants of which were exhibited. It is a narrow-leaved variety, about an inch wide at broadest part, green, edged with red. The younger leaves are much more coloured, however, and the stalks of them are bright. The variety will doubtless prove a useful one for decorative purposes. Messrs. J. VEITCH also showed sprays of several varieties of Hibiscus: *H. monstrosus*, white, with red centre; *H. celestis*, blue; and *H. lotus album*, pure white; and flowers and foliage of the following Nymphaeas: *N. alba*, *N. odorata*, *N. o. alba* and *sulphurea*, *N. Ellisiana*, *N. pygmaea*, *N. Marlacea carnea*, albidia, and *chromatella*; *N. Laydekeri*, *N. L. lilacea*, fulgens (red), and *rosea* (Silver Banksian Medal). The last exhibit of annuals for the season from Messrs. JAS. VEITCH & SONS included some very pretty species, the *Salpiglossis*, *Asters*, *Phlox Drummondii*, *Dianthus* and others were most noticeable. Some Gladioli from the same firm illustrated some of Child's hybrids. These have good sized flowers of much substance, and in colour ranging from light salmon to rich crimson.

From Sir TREVOR LAWRENCE'S gardens at Burford, Dorking (gr., Mr. Bain), came several choice species. An Award of Merit was recommended to *Lobelia Rivoirei*, a very strong and erect-growing *Lobelia*, with very pale pink-coloured flowers. *Lobelia Carmine* Gem was shown also the sprays, being very abundantly flowered, and *L. Crispum* Gem, and *L. Gorardi*, a blue-flowered one; *Rudbeckia bicolor superba*, yellow, each petal marked with big blotch of brown, and a number of varieties of *Pentstemon hybridus grandiflorus*. There last were all very fine, the flowers being large in size and beautifully coloured. Plants of *Angelonia grandiflora* and *A. g. alba* were shown as lifted from the open ground, in which they were planted in June. The plants were very freely flowered. Sir TREVOR also showed a fasciated growth 6 feet high, with many flowers, of *Helenium autumnale superbum* (Award of merit).

Messrs. PAUL & SON, Cheshunt, exhibited sprays of a very ornamental variety of *Acer Negundo*, and named *elegans*. The foliage is very prettily variegated, being green and yellow, in the older ones the yellow is lighter. As shown, it appeared to have a partially pendent habit, but whether it is constant or not we are not sure. (1st class certificate.)

Seedling Dahlias were shown by several exhibitors, and in some cases Awards of Merit were recommended. Mr. JAS. STREDWICK obtained an Award for Cactus Dahlia *Magnificent*, a large flower of good Cactus form, and in colour a curious mixture of buff and red. A similar award was made to Pompon Lady Rogers, a white variety of full size, and good form, shown by Mr. Leggatt, gr. to Sir ROBERT HARGREAVES ROGERS, Bexley, Kent. Almost a dozen very lovely new single-flowered Dahlias were shown by Mr. T. W. GIRDLESTONE, Sunningdale, Berkshire, and to two of these Awards of Merit were recommended. These were Puck, buff-red, with crimson a circle around the disc; and Columbine, a rosy-purple coloured flower, with yellowish centre. In each case the form of the flower was satisfactory.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, Sussex, showed a quantity of sprays of ornamental and flowering trees and shrubs. Amongst these was noticed *Ulmus Van Houttei*, a fine golden-leaved Elm; the curious *Salix annularis*, with twisted or rolled leaves; *Sambucus argentea variegata*, *Spiraea callosa rosea*. Messrs. CHEAL & SONS had also a very fine display of Dahlia blooms, of Cactus, Pompon, and single flowering varieties, in all sections there being many choice varieties. Awards of Merit were recommended to Cactus variety, *Lorelei*, an improvement upon *delicata*, rose with lighter centre, the petals much incurved; and to Mrs. Finlay Campbell, an orange scarlet flower of true Cactus form. This is a most attractive variety. A Silver-gilt Banksian Medal was awarded the exhibits.

Messrs. J. HILL & SON, Lower Edmonton made a large exhibit of choice Ferns, in which we noticed many good varieties of *Adiantums*, *Pteris*, *Gymnogramma*, also beautiful specimens of *Woodwardia radicans*, *Microlepia hirta cristata*, *Lastrea lepidota*. A new variety of *Asplenium* named *A. Hilli*, is a very pretty form with delicately cut fronds (Silver Flora Medal).

Mr. H. B. MAY, Dyson's Lane Nursery, Upper Edmonton, showed a group of plants in which some specimens of *Salvia splendens grandiflora*, *Bouvardia Humboldtii grandiflora*, and other varieties, *Swainsonia galegifolia alba*, &c., were included. A double-flowered Fuchsia, named *Ballet-girl*, with red sepals and white corolla, was shown in the form of half-a-dozen exceptionally fine, well-flowered plants, in 5-inch pots; Mrs. Leopold de Rothschild, Winter Cheer, Miss Jolliffe, and other Carnations, were also shown, the plants in each case being neat, pretty specimens (Silver Banksian Medal).

Mr. RUMSEY, Joyning's Nurseries, Waltham Cross, showed a fine lot of sprays of his new H.-P. Rose Mrs. Rumsey. For so late a date they were very good (Bronze Banksian Medal).

A fine lot of Canna spikes, and some *Streptocarpus* plants in pots from A. J. HOWARD, Esq., Worton Hall, Isleworth, was awarded a Silver Banksian Medal.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), T. B. Haywood, Sydney Courtauld, De B. Crawshaw, A. H. Smee, J. Gurney Fowler, W. H. White, T. W. Bond, H. J. Chapman, W. H. Young, J. Douglas, and H. M. Pollett.

Mr. Owen Thomas, gr. to the QUEEN, Frogmore, exhibited a wonderful specimen of *Peristeria elata* (Dove Orchid), standing some 8 feet in height, and bearing eight spikes, having in the aggregate over 300 large, white, wax-like flowers and buds, whose fragrance was very apparent at some distance from the plant. Although a species long known in gardens, of which smaller specimens had often been shown, it has never been Certificated by the Orchid Committee, who accorded it now a First-class Certificate, and further voted a Silver Flora Medal as a recognition of good culture extending over what must have been a period of many years.

Messrs. JAS. VEITCH & SONS, Ltd., Royal Exotic Nursery, King's Road, Chelsea, staged a group of very fine Orchids, chiefly their hybrid Cattleyas, and *Laelio-Cattleyas*. Among them *Cattleya* × *Ella* (C. bicolor, C. Warszewiczii) made its appearance for the first time. It is a very pretty and distinct hybrid, with well-displayed flowers of good substance. The sepals were pale rosy-lilac, with a white area at the base; petals much broader, ovate and crimped, and of a darker shade of rosy-lilac than the petals. The lip was reminiscent of C. bicolor the seed-bearing parent in the rather small, pinkish side-lobes clipping the base of the fleshy column, and the narrow isthmus on which the front lobe was extended. The front lobe and its connection was of a glowing purple tint, the broad flat anterior portion bearing a narrow, fimbriated, lavender-coloured margin (Award of Merit).

Next in importance was *Cattleya* × *Euphrasia* var. *Langleyensis* (C. Warszewiczii and C. superba), a fine flower, of a bright light rose colour, the base of the lip being white, tinged with primrose-yellow, the showy front portion dark claret-purple, the margin prettily crimped.

Messrs. VEITCH also showed three plants of *Laelio-Cattleya* × *callistoglossa ignescens*, one of the finest of their hybrids, several *L.-C.* × *Nysa*, two varieties of *Cattleyas* × *Eros* (*Mossiae*, *Walkeriana*), their new and distinct *Cypripedium* × *Rothschildii* var. *villosum*, C. × *Clinkaberryanum*, C. × *H. Ballantine*, C. × *Milo*, C. × *Harrisianum superbum*, the remarkable *Epipendrum* × *radicante-Stamfordianum*, Mas-

devallia × Imogen, a good *Rodriguezia venusta*, *Renanthera matutina*, varieties of *Dendrobium Phalenopsis*, *Cattleyas*, &c. (Silver Flora Medal).

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), showed a plant of the very remarkable *Dendrobium sanguineum* with slender, whip-like stems, bearing a large solitary blood-red flower, the sepals and petals of which were nearly equal, and the lip inconspicuous, giving to the flower the appearance of a crimson *Ixia* (Award of Merit).

EDGAR COHEN, Esq., Hall Road, St. John's Wood (gr., Mr. A. Vass), showed a grand plant of *Lælio-Cattleya* × *elegans*, Cohen's variety, a very handsome form, in which the sepal and petals had a very peculiar tint of greenish-yellow, tinged and veined with rose colour. The large lip, which partook much of the form of *Lælia purpurata*, had the tube cream-white, and the front portion of a rich bright purple.

Messrs. F. SANDER & Co., St. Albans, showed *Cypripedium* × *Mrs. Edgar Cohen* (*callosum* × *niveum*), a pretty white flower, tinged with rose; and *C.* × *William Trelease* (*Rothschildianum* × *Parishi*), a distinct hybrid, with a massive, yellow upper sepal, bearing many dark purplish lines; petals

Fruit Committee.

Present: Philip Crowley, Esq., Chairman; and Messrs. Jos. Cheal, W. Poupart, M. Gleeson, A. H. Pearson, Geo. Bunyard, J. Wright, Alex. Dean, Geo. T. Miles, C. Herrin, W. Pope, H. Balderson, Jas. Smith, and Geo. Norman.

Messrs. T. F. RIVERS & SON, Sawbridgeworth, Herts, showed a score of Peasgood's Nonsuch Apples of extra exhibition size and quality; they were orchard-house fruits, and faultless. They showed a bunch of Grapes each of the varieties Gradiska and Buckland's Sweetwater; also of a new white Grape from Australia named Centennial. The fruits of the last named were exceptionally large, but partly hollow, and deficient in flavour. Well-fruited Plum-trees in pots of the following varieties were shown: Jefferson, Burbank, Archduke, Victoria, Belgian Purple, Coe's Golden Drop, Pond's Seedling, and an unnamed seedling (Silver Knightian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, exhibited a collection of over sixty dishes of fruit, which was awarded a Silver Knightian Medal Of

uncommon. Messrs. WATKINS & SIMPSON showed a very nice red Beet of the Globe type (Award of Merit).

The following Potatoes were recommended Awards of Merit:—Major, from Mr. E. R. WEBBER, Worcester; Challenge, from Mr. SYDENHAM, Birmingham; Miss Ellen Terry, from Mr. C. F. BLINCO; Fishtofts Seedling, from Messrs. W. W. JOHNSON & SON, Boston; Devonian, from Mr. O. THOMAS, Frogmore Gardens; Ivo (Canaries), from Mr. JOHN WRIGHT, Wandsworth; and Fidler's Queen, from Messrs. FIDLER & SON, Reading. These, as well as the following Onions, will be found described on p. 186, in our last issue: B cold's Banbury, and Nuneham Park ×, from Messrs. W. J. NUTTING & SON; Hurst, from Messrs. HURST & SON, Houndsditch; Wroxton, and Rousham Park, from Messrs. WATKINS & SIMPSON, Strand, London.

Mr. J. McINDOE, Hutton Park Gardens, Guisborough, Yorks, showed a dish of ripe fruits of the Burbank Plum, which are round and much resemble a Nectarine in appearance.

From H. O. HAGAN, Esq., River House, Hampton Court (gr., Mr. Last), were shown very fine "Exquisite" Peaches



FIG. 55.—VIEW OF CRIMSON RAMBLER ROSE IN THE GARDEN OF W. MARSHALL, ESQ., AUCHINRAITH, BEXLEY, KENT. (SEE P. 202.)

yellow, with a few irregular blotched lines of dark purple, the tips tinged with rose colour; lip tinged and veined reddish-rose. They also showed a fine variety of *Dendrobium Schroderianum* and other species.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, showed *Cypripedium* × *Palawanense*, a natural hybrid, imported from North Borneo, and bearing much resemblance to *Cypripedium* × *Kimballianum*, illustrated in the *Gardeners' Chronicle*, June 29, 1895, p. 801, from a plant shown by Messrs. F. SANDER & Co., and which was also an imported variety, said to be a cross between *C. Dayanum* and *C. Rothschildianum*.

O. O. WRIGLEY, Esq., Bridge Hall, Bury (gr., Mr. Rodgers), showed *Cypripedium* × *Mrs. F. L. Ames* (*Fairleanum* × *tonsum*), with flower of the *C.* × *vexillarium* type, but with a decided green tint in the ground colour.

Sir T. G. FREAKE, Bart., Warfleet House, Dartmouth, sent *Dendrobium Phalenopsis*, Warfleet variety, with flowers of a pure white, except the lip, which had a slight yellow shade at the base, and purple veining on the front lobe.

C. L. N. INGRAM, Esq., Elstead House, Godalming, showed *Lælia* × *splendens* (*crispa* × *purpurata*), a fragrant, hybrid, with strong indication of *L. crispa* in the long, wavy, purplish crimson front lobe of the lip.

Apples we noticed good examples of Pott's Seedling, Grenadier, Keswick, Lord Suffield, Stirling Castle, Emperor Napoleon, Duchess of Oldenburgh (Kitchen); and of dessert varieties, Yellow Ingestre, Early Strawberry, Kerry Pippin, Lady Sudeley, Yorkshire Beauty, Duchess' Favourite, &c. Several varieties of Siberian Crabs, and fruiting branches of the same were shown. Sea Eagle and Princess of Wales Peaches, Denniston's Superb Greengage, Victoria Plums, Negro Largo Figs, and a few dishes of Pears were included. Of the Pears Clapp's Favourite, Mme. Treyve, and others showed signs of ripening, but fruit generally this season appears to be about a fortnight late (Silver Knightian Medal).

Messrs. SPOONER & SONS, Hounslow, Middlesex, also exhibited a collection of forty dishes of Apples, and a Bronze Banksian Medal was awarded the exhibitors.

Several new Tomatos were shown, including Stirling Castle, a roundish, smooth-fruited variety from Messrs. BARR & SON, King Street, Covent Garden, London. Yellow Peach Tomato, from the ROYAL HORTICULTURAL SOCIETY'S GARDENS, Chiswick; St. Simon, from Mr. J. H. WILSON, Handsworth, Sheffield; and Sutton's Peach Blow, from H. FAURE WALKER, Esq., Highley Manor, Balcome (gr., Mr. J. Cole). This exhibitor also showed a dish of exceptionally fine Morello Cherries, being in colour, and especially in size, very

and Pine-apple, and Rivers' Orange Nectarines (Cultural Commendation).

A new Melon, from Mr. O. THOMAS, Royal Gardens, Frogmore, was recommended a First-class Certificate. It is a white-fleshed variety, and resulted from a cross between Hero of Lockinge and Royal Ascot; it is one of the most deliciously-flavoured, white-fleshed Melons ever submitted to the committee.

Very commendable fruits of Early Grosse Mignonne Peach and Lord Napier Nectarine were shown by Mr. J. Day, gr. to Earl GALLOWAY, Galloway House, Garliestown, N.B. (Cultural Commendation). Good Sea Eagle and Princess of Wales Peaches were shown by Mr. T. ROBINSON, Elmsfield Gardens, Hollinbourne (Cultural Commendation); and a score of extra-fine fruits of Princess of Wales Peaches, from Mr. J. MILLER, gr. to Lord FOLEY, Ruxley Lodge, Claygate, Esher were also Culturally Commended.

Lecture.

THE CULTIVATION OF DISAS.

In the afternoon a paper by Mr. T. W. Birkinshaw on "The Disa" was read by the secretary (Rev. W. Wilks, M.A.), the chair being taken by Mr. Geo. Paul. Mr. Birkinshaw, who is a most successful cultivator of these charming

Orchids, after a few introductory words of appreciation of a Disa's attractiveness and utility, at once commenced to describe the details of its successful cultivation, remarking that primarily the directions were applicable to *D. grandiflora*, and its fine blood-red variety *superba*. Mr. Birkenshaw's references to the conditions under which his own plants were cultivated, went to show that they require a house to protect them from severe frost and cold draughts, but abundance of fresh air is necessary, and even during very cold weather the admission of a little air several times in the day to change the atmosphere will be of benefit to the plants. The atmosphere should not become dry during day or night. In the winter of 1894, said Mr. Birkenshaw, and owing to there being a weak boiler, the temperature of his Disa-house fell 1° or 2° below freezing point. The young growths were blackened, and the soil was quite hardened upon the surface. But by the use of cold water over the plants before the sun was upon them he prevented any injury resulting, and the same season he had forty to sixty spikes of bloom, which bore six, eight, or nine flowers upon a spike. The plants usually bloom during June and July, but by keeping the plants cool and shading them from the sun he had delayed them from flowering until July 1, and they had, then, lasted until the end of August. Disas take a short rest before growth commences, and when it is seen that the old foliage is becoming brown in tint, afford the plants water less frequently. The best time to re-pot the plants is in the latter part of September or beginning of October. Mr. Birkenshaw's practice is to re-pot them one year, and the following year merely to re-surface them and put the drainage in perfect order. Ordinary pots or pans are preferable to perforated ones. The crocks are best put ends downward, instead of flatly, and the young roots delight to run down between the crocks so placed. Cover the crocks with Sphagnum-moss, and be sure that the water will be able to pass away quickly.

For potting the plants use peat, a little dry cow-manure, and broken charcoal. Pass all through a $\frac{1}{2}$ -inch sieve, and reject the fine portion that passes through the same. The plants will require to be knocked out of the pots with care, that the roots be injured as little as possible. In potting it is best to elevate the plant a little above the rim; there is then less liability for damping to occur at the collar. The potting material may be surfaced with living sphagnum-moss and broken sandstone. Water the plants afterwards with tepid water, and remove them to their winter quarters. They should be shaded from hot sunshine, and for this purpose blinds are best, it being possible to remove them when not required. Little root-watering will be needed until after February, in which month the plants will commence to grow. During March, April, and May, however, they may be given copious supplies, and in the latter month guano at the rate of 1 oz. to 1 gallon of tepid water, if given twice a week, will be of much benefit. Mr. Birkenshaw exhibited a few flowers that his plants had produced so late as September.

BATH FLORAL FETE.

AUGUST 31 and SEPTEMBER 1.—The Bath Floral Fête was established in 1855, and ever since it has provided Bath with flower shows of an attractive character, the outdoor ones being held in the Sydney Gardens. The opening day was preceded by a boisterous night; the wind brought down a large branch from a gigantea Chestnut-tree, which fell upon the principal tent, doing some harm to the specimen plants. A brilliant day followed, and a large company came to see one of the best exhibitions held in Bath for some time past.

Fuchsias, an old-established feature, always take the lead in the schedule; and Mr. G. TUCKER was 1st with nine specimens, staging grandly grown and flowered plants, such as only the west of England can turn out. He had Diamond Jubilee, a fine bright variety of his own raising; Doel's Favourite, a local variety raised at Trowbridge some thirty years ago, and still one of the best exhibition varieties; Final, Charming and Bountiful, all dark; Western Beauty, one of Mr. James Lye's recent introductions, a rare exhibition and decorative variety; Mrs. Bright and Arabella. Mr. J. WILLERS, Bath, was 2nd with very fine, freely grown bush specimens; Mr. A. Young, gr. to Lady PITMAN, Bath, had the best six, also very good; and Mr. G. POND, Bath, had the best four; single specimens, light and dark were also staged.

The best group of plants of 100 square feet came from Mr. J. CYPHER, and was set up in his best style, and it formed a great attraction; Mr. Tauser, gr. to R. B. CATER, Esq., Bath, was 2nd with an excellent arrangement.

There was a good competition in the class for ten stove and greenhouse plants in bloom, Mr. CYPHER taking the 1st prize. Mr. GEO. TUCKER was a remarkably good 2nd; Mr. H. POCOCK, Trowbridge, had the best three plants; Mr. CYPHER had the best specimen plant, showing a fine one of *Ixora Duffii*; Mr. G. TUCKER coming 2nd with *Dipladenia Brialleyana*, specimens of which he brings to great perfection. Mr. TUCKER had the best greenhouse plant in *Statice Gilberti*.

Mr. CYPHER was the only exhibitor of six Orchids and six Heaths. The best newly-introduced plant was *Codiaeum Nestor*, from Mr. CYPHER.

Pelargoniums, or Geraniums, as they are still styled in the schedule, were good. The best six plants came from Mr. TUCKER. Cannas were small and poor in quality; and Gloxinias were decidedly good. Mr. TUCKER took the 1st prize. Lilliums, Cockscombs, and Petunias, were shown in fairly good character. Mr. Chester, gr. to E. T. D. FOXCROFT, Esq.,

had the best double-flowered Begonias; and Mr. G. TUCKER the best single ones.

Foliage plants were finely shown. In the class for twelve, with six specimens in bloom, Mr. CYPHER was 1st, with a fine collection of Palms and Codiaeums; Messrs. E. S. COLE & SON, Bath, were 2nd. Mr. G. HALLETT, Bath, had the best eight foliage plants. The best single specimen was *Codiaeum Chelsoni*, from Mr. CYPHER; Messrs. J. B. WOODS & SON, Chipping Sodbury, were 2nd, with *Cycas revoluta*.

Exotic Ferns in groups of twelve and six specimens, made a fine feature. In the former class Mr. GEORGE TUCKER was 1st, and Messrs. R. PALMER & SON 2nd. The best six came from Mr. TRUCKLE, gr. to T. CARR, Esq., Tiverton. Mr. G. TUCKER had the best specimen—a fine *Gymnogramma sulphurea*. Nice bushes of *Coleus* were also exhibited.

CUT FLOWERS.

There was always an extensive and fine display of cut flowers at Bath. The best collection of thirty-six spikes of *Gladioli* came from Mr. S. BIRD, gr. to F. H. FOX, Esq., Wellington, which comprised some very fine spikes. Mr. F. HOOPER, Bath, had the best twelve spikes.

Dahlias, in several classes, made a good display. The best twenty-four came from Mr. G. HUMPHRIES; Messrs. KEYNES, WILLIAMS & CO., Salisbury, were 2nd. Messrs. J. CRAY & SON, Frome, had the best twelve. Mr. G. HUMPHRIES had the best twelve fancies, a very good stand. Mr. J. BURGESS, Kingswood, had the best twelve bunches of single, a little over large, but very fresh and bright. Strange to say, prizes are not offered for either Cactus or Pompon varieties!

Roses were a good feature, Mr. J. MATTOCK bringing some remarkably good flowers for the season from Oxford; he was 1st with twenty-four varieties. Mr. G. GARROWAY had the best twelve. Mr. MATTOCK came in 1st with twelve Teas, showing in excellent form.

Zonal Pelargoniums in twenty-four bunches was a fine feature, Messrs. E. COOLING & SONS, Bath, taking the 1st prize with a collection containing many handsome novelties, German Asters, of the Chrysanthemum-flowered type, and the Comet type, were finely shown for the season.

Flowers of hardy herbaceous plants, in bunches of twelve, were very fine. Mr. A. A. WALTERS had the 1st prize for bold and striking bunches. Mr. GEO. GARROWAY had the best twenty-four bunches of hardy annuals, and staged a very showy and attractive collection. *Phlox Drummondii*, Stocks, African Marigolds, and double Zinnias were well represented.

Fruit.—There was a good display of fruit. The best eight dishes came from Mr. STRUGNELL, gr. to Col. DREXEL, Rood Ashton, who had good Alicante and Muscat of Alexandria Grapes, Sea Eagle Peaches, Pine-apple Nectarines, Hems Kirk Apricots, &c. Mr. G. PYME was 2nd, also with a good collection. The best eight bunches of Grapes in four varieties came from Mr. W. TAYLOR, gr. to C. BAYER, Esq., Forest Hill, London, who had excellent bunches of Black Hamburg, Muscat of Alexandria, Madresfield Court, and Gros Maroc; Mr. W. ALLON, gr. to W. MARSHALL, Esq., Taunton, was 2nd. The best three bunches of Black Hamburg came from D. E. TAYLOR, Esq., Bath. Mr. Malvern, gr. to A. R. BAILEY, Esq., Frome, had the best two bunches of Muscat of Alexandria, very good. Mr. Marshall, gr. to J. DOLE, Esq., Bristol, had the best three bunches of any other white, staging Buckland Sweetwater. The best any other black was Madresfield Court.

Melons were in plenty. The best dish of Peaches was Barrington; the best of Nectarine, Lord Napier. There were good Plums, Figs, and Cherries, with Nuts in abundance. The best three dishes of Pears were of Bourré Clairgeau. The best twelve fruits of dessert pears Pitnaston Duchess; the best three dishes of dessert Apples, were Worcester Pearmain, Duchess of Oldenburg, and Lady Sudeley. The best single dish was Lady Sudeley. The best three dishes of culinary Apples were Peasgood's Nonsuch, Ecklinville and Emperor Alexander. The best single dish consisted of Peasgood Nonsuch.

Vegetables.—Some very good vegetables were staged, the best collection of twelve dishes came from Mr. T. WILKINS, gr. to Lady T. GUEST, Henstridge; Mr. G. GARROWAY was 2nd. Mr. W. J. STOCKLEY had the best four dishes of Potatoes, and Mr. WILKINS won the 1st of the special prizes offered by Messrs. SUTTON & SONS for collections of vegetables.

Non-Competitive Exhibits.—Several miscellaneous collections of a valuable character were staged. Messrs. JARMAN & CO., Chard, had Dahlias, *Gladioli*, &c.; The Devon Chrysanthemum Nursery, Teignmouth, Dahlias and other flowers; Mr. J. B. BLACKMORE, Bath, had double and single flowered Begonias; Messrs. J. CRAY & CO., Sweet Peas, Dahlias, &c.; Mr. J. MATTOCK, a fine collection of garden Roses; Messrs. WEBB & SONS, Wordsley, cut flowers, &c.; Mr. A. A. WALTERS, Bath, a large collection of cut flowers; and Messrs. G. COOLING & SON, a table of plants and flowers, in addition to a large collection of Apples and Pears.

MAIDENHEAD HORTICULTURAL.

SEPTEMBER 1.—Last year the fortune of this Society reached a very low ebb, partly owing to bad weather, but also to a lack of enthusiasm in the executive committee, and the repetition of the same features from year to year.

There was a slight improvement on the occasion under notice, but more suitable grounds would be appreciated in which to hold the show. The groups of plants for effect were extremely good on this occasion. Fruit and vegetables were also abundantly shown, and of very good quality, outdoor Peaches and Nectarines being very good.

Plants.—Class 1 specifies twelve handsome foliage plants in 8-inch pots, which brought several good exhibits, Mr. Fulford, gr. to F. D. LAMBERT, Esq., Cookham, obtaining the 1st award with highly-coloured *Codiaeums* of Countess, Lady Zetland, Baron Frank Sellière, and Aigburthensis among others, and a *Panax Victoris* and good *Dracaenas*. Mr. Aitken, gr. to Col. MEEKING, Richings Park, Slough, was 2nd.

For six stove and greenhouse plants, three to be in flower, the latter exhibitor was 1st, with fairly good specimens; and also for six stove and greenhouse Ferns. For a single specimen flowering plant, Mr. PHILLIPS, gr. to A. N. GILBEY, Esq., Melmoth Lodge, Cookham, was 1st, with a very fine plant of *Eucharis grandiflora*, admirably flowered. Mr. FULFORD had the best specimen foliage plant, showing a finely-coloured *Croton*.

In a strong competition, Mr. Wood, gr. to Lord BOSTON, Hedsor, Maidenhead, was first for six plants suitable for table decoration. Fuchsias were fairly well shown, medium-sized, untrained specimens from Mr. PAXTON obtaining the 1st prize. Mr. J. W. STONE, Cookham Dean, was easily 1st with six nice tuberous Begonias; and Mr. PHILLIPS was the only exhibitor of zonal Pelargoniums, showing large and finely-flowered plants.

In the large-group class, Messrs. PHILLIPS and AITKEN were the chief competitors. Last year equal 1sts were awarded to these two exhibitors, but on this occasion Mr. Phillips somewhat easily beat his opponent, with an arrangement that left little room for improvement.

With a smaller semicircular group Mr. FULFORD was a long way ahead of other competitors, with a nicely arranged bank of good plants, among which *Clerodendron fallax*, *Dracena Sanderi*, and some nice Lilliums were noticeable.

Cut Flowers.—In the nurseryman's class for twenty-four Roses, Mr. G. PRINCE, Oxford, was 1st, with a good stand; 2nd, Mr. W. TAYLER, Osborn Nursery, Hampton. In the three following classes, for Dahlias and Asters, Mr. TRANTER, The Nursery, Henley-on-Thames, secured the 1st prizes.

In the amateur's classes Roses were numerous shown, but the quality was poor. Cactus Dahlias were very well staged by several exhibitors; Mr. POND, gr. to Mrs. LANG, was 1st for six bunches. Asters and Zinnias were strongly shown. With the latter Mr. POND was 1st, staging fine flowers. Mr. WOOD, Hedsor, was 1st for twelve spikes of *Gladioli*, with good specimens.

In the table decoration's class, restricted to ladies, Mrs. HERRIN, Dropmore, was 1st, also for three button-hole bouquets.

Fruit.—For a collection of six dishes, Mr. Goodman, gr. to Miss HAMMERSLEY, Abney House, Bourne End, was well 1st, with Muscat Grapes, Stirling Castle Peaches, fine Humboldt Nectarines, Kirke's Plum, and Brunswick Figs; 2nd, Mr. AITKEN. For four dishes, distinct kinds, grown in the open air, the judges gave the 1st award to an exhibit from Mr. G. LANE, gr. to Miss RIDGE, that contained two dishes of Plums, which was not according to schedule; 2nd, Mr. WOOD, with good Apricots, Plums, Peaches, and Nectarines; several other exhibitors also staging well in this class. Mr. JOHNSON, gr. to A. GILLIAT, Esq., Stoke Poges, Slough, was 1st with a fine dish of Princess of Wales Peach, and also in both classes for green and scarlet-fleshed Melons. Plums and Nectarines were staged by several exhibitors in fine condition. For Black Hamburg Grapes, Mr. LANE secured the 1st; and for any other black Grape, Mr. Blackmore, gr. to R. HAY MURRAY, Esq., Spintfield, Marlow, was 1st, with finely-coloured Madresfield Court. Mr. FULFORD was 1st for Muscats; and for any other white Grape, Mr. LANE was 1st, with Buckland's Sweetwater.

Vegetables were extensively shown, and the quality throughout was very good.

Non-competitive Exhibits were hardly so numerous as usual. Messrs. WEBB & SONS, Wordsley, Stourbridge, staged a large and interesting collection of annuals, among which the brightly-coloured Empress Larkspur was conspicuous, also seedling Carnations; Mr. R. OWEN, Castle Hill, Maidenhead, put up a large group of Cannas and floral decorations; Mr. E. F. SUEB, herbaceous flowers and annuals; Mr. G. PRINCE, Oxford, a collection of Roses in bunches; and Mrs. BROUGHTON, Norfolk Park Nursery, a group of miscellaneous plants.

HORTICULTURE AT LYONS.

SEPTEMBER 1, 2, 3, 4.—The International Horticultural Exhibition, held under the auspices of the authorities of the City of Lyons, to which allusion has been made previously in the columns of the *Gardeners' Chronicle*, was held in that city on the above dates, and, with its concomitant horticultural functions, may be pronounced to have been an unqualified success. Horticulturists, both amateur and professional, were present from all parts of France, whilst representatives attended from Great Britain, Germany, Italy, Switzerland, and elsewhere.

The arrangements made showed at one and the same time a comprehensiveness and a completeness of detail which were the admiration of everyone present, and the organising committee, under the presidency of Mr. ANTOINE RIVOIRE, is to be warmly congratulated on the successful results of its labours. The writer can personally testify to the great kindness and hospitality extended to foreign visitors on this occasion.

The exhibition was held in the spacious and beautiful square called the Place Carnot, which was fenced in for the occasion, and formed, with its magnificent monument to the Republic in the centre, an ideal location for a flower

show. Proceedings commenced with the assembling of the judges at the Secretary's tent on the show-ground, on the morning of August 31; they forthwith proceeded to the election of a president and secretary, the former office being filled by M. E. ANDRÉ, of Paris, and after being detailed into sections for judging the various classes, they adjourned to luncheon, the judging being performed in the afternoon, so that all might be ready for the opening of the exhibition to the public on the morning of September 1. All was completed in good time, and when it is stated that the schedule contained upwards of 240 classes, some idea may be formed of the work that had to be accomplished. On the evening of the opening day, a magnificent banquet was given to the judges and others interested in the exhibition, in the beautiful Salons Monnier, situated in the superb Place Bellecour; M. ANTOINE RIVOIRE presided, and after the dinner, in a graceful and elaborate speech, thanked the judges, in the name of the municipality, for their labours, to which M. ANDRÉ very happily responded.

On the afternoons of September 2 and 3, the Society of French Rosarians, of which M. OCTAVE MEYRAN is Secretary, held a Congress at the Palais des Arts, where papers on numerous questions interesting to rosarians were read, valuable discussions ensuing. On the evening of Sept. 2, the Syndicat of Horticulturists of the district of Lyons, of which Mr. PERNET-DUCHER is secretary, held a *fête* in the Salons Monnier, which was attended by a very large concourse of guests. The entertainment provided was most agreeable and instructive, one of the most interesting features being a lime-light exhibition of portraits of some forty deceased worthies of French and Belgian horticulture; each portrait was accompanied by a brief biographical notice by Mr. MEYRAN, who earned the thanks of all present for his painstaking labours in obtaining the necessary materials and information for such a unique exhibition. The whole festivities closed with a grand dinner, given by the Municipal Council of Lyons at the Town Hall on the evening of September 4.

Cut Flowers.—As regards the exhibition, it would, of course, be out of place to attempt to give a complete account of the various articles exhibited; but as some of them possessed special interest for English horticulturists, I propose to name a few that appeared to me most important from this point of view. Where, however, the material for election is so vast, and the quality of almost everything so good, it is not easy to make a selection, and I must claim the indulgence of your French readers for any errors of omission of which I appear to have been guilty. One of the most striking groups in the show was the large collection of cut blooms of Gladioli sent by M. LEMOINE, of Nancy. This included the cream of his introductions, and many of his finest seedlings not yet in commerce of the Lemoinei and Nanceianus sections, and it is difficult indeed to do justice to the richness and beauty of colour and form which distinguished the flowers of which this group consisted. Every shade of cream, yellow, fawn, rose, scarlet, crimson, and purple, almost to blackness, and likewise pure white, appeared to be present, the rich and brilliant ground hues of the flowers being blotched, dashed, striped, and shaded with other harmonious, though strangely contrasting colours of equal softness, brilliancy, and beauty. The general effect of this group was extremely beautiful, and it created quite a sensation in the show. It is difficult to believe that such a variety of tints could be found in any other flower. Gladioli in fine variety, principally of the Gandavensis race, were also well shown by Messrs. VILMORIN, ANDRIEUX & Co., of Paris.

Three classes of flowers for which the horticulturists of Lyons have long been famous, viz., Roses, Carnations, and Cannas, were of course much in evidence. Carnations and Cannas were exceptionally fine; but, owing to the prolonged heat and drought, the Roses were below the usual quality—indeed, a visit to the parched grounds of some of the best-known rosarians the day before the show made me wonder if any flowers at all would be forthcoming. No fewer than fifteen classes were allotted to Roses in the schedule, but in several there were no entries; and such groups as were exhibited did not present any special features. M. PERNET-DUCHER showed some nice flowers, not entered for competition, and he also received the Gold Medal for his seedling Soleil d'Or, a Rose of some interest, being a variety of *Rosea lutea*, blooming in autumn as well as in summer. The flower exhibited on this occasion was of medium size, full, and of the colour of Persian Yellow, shaded in the centre with the coppery-red tints of the Austrian Copper. It may be remarked in reference to this, that at another continental Rose-show last year, an autumn-blooming seedling of *Rosa lutea* from another source was exhibited; so that, without doubt, independently of any sports that may have accidentally bloomed in autumn in this country, we are now within measurable distance of having our gardens enriched in autumn with flowers of the rich and brilliant yellow tints of the *Rosa Harrisoni* and the Persian Yellow. Another seedling Rose came from M. BONNAIRE, and was named Madame Jacques Charraton; it received a Silver-gilt Medal. Carnations were exhibited by many growers; they are of the perpetual-flowering race, and were presented in large tufts, densely flowered, of all shades of colour; arranged in beds and masses on the cool green turf of the Place Carnot, they looked exquisite. M. CHAVAGNON received the premier prize, a Gold Medal, for them; but many other groups were also very fine.

Cannas, like Carnations, were shown by many growers, and were exceedingly beautiful, the lustrous tints of scarlet and crimson exhibiting an unusual brilliancy under the rays of a southern sun. Mr. MOLIN had an enormous collection of these plants in large pots, which completely surrounded

the Statue of the Republic. This was really a splendid exhibit, and among the host of varieties of which it was composed, may be mentioned as being especially fine—Menelik, scarlet; Auguste van den Heede, salmon-orange; Comte de Bouchaud, yellow, heavily spotted crimson; and the dwarf-growing Etandard, orange-crimson; Souvenir d'Antoine Crozy, scarlet, edged yellow; and Madame Favrichon, crimson, the last named was also shown in another place by M. FAVRICHON. Other flowers of special interest and merit were *Lobelia Gerardi* in variety, shown by Messrs. RIVOIRE; zonal *Pelargoniums* by Mr. ROZAIN-BOUCHARLAT, and others, some of the flowers rayed beautifully, and spotted with minute dots; annual and biennial plants, magnificent groups by Messrs. LEONARD LILLE of Lyons and VILMORIN of Paris; and "Oleanders" from several quarters. Mention must also be made of a fine group of aquatic plants in flower, shown by Mr. LAGRANGE, this included the new *Nymphæas*, now becoming so popular; one variety, *N. Marie Lagrange*, has large pink flowers, with a white stripe, and was shown in excellent condition.

Stove and Greenhouse Foliage and Flowering Plants.—These were largely exhibited, and were very fine. The principal prize of the show, the "Grand Prix d'Honneur," for the exhibitor who most contributed to the splendour of the exhibition, was awarded to Mr. B. COMTE, whose exhibits consisted of these plants.

Vegetables and Fruits showed in many classes the effects of the drought, but exception must be made in the case of the magnificent collection of the former, which was set up by Messrs. RIVOIRE & SON, and obtained the prize of honour in this section. It was an immense collection, almost bewildering in the number of its details, and plainly showing the many varieties of soil and climate for which this justly celebrated firm has to cater. Perpetual-bearing Strawberries were well exhibited, one kind, called *La Constante Fécondé*, being particularly good.

Hardy Trees and Shrubs—Excellent collections of Conifers, Hollies, Yews, Aucubas, and other hardy evergreens were shown by Messrs. JACQUIER, TREYVE, MOREL, and others; and a very distinct and striking group was a collection of some twelve varieties of *Magnolia grandiflora*, shown by Messrs. TREYVE.

No horticulturist on a visit to the beautifully situated City of Lyons would think of leaving without visiting the splendid Parc de la Tête d'Or, with its well-kept botanical garden. At the time of the show, the glorious hues of the bedding plants in the Parc bore testimony to the magnificent summer climate of this horticultural centre of France, as well as to the energy and skill of her sons, and the excellent culture everywhere apparent there formed a fitting complement to the beauties of the exhibition in the Place Carnot. *Arthur William Paul, Waltham Cross.*

NATIONAL DAHLIA.

SEPTEMBER 2, 3.—The annual show of the National Dahlia Society was held at the Crystal Palace on the above dates, in glorious weather. The general drought that has obtained, did not influence the character of the exhibition to a great extent. The "show" blooms were hardly so large and heavy as we have seen them; and the "Cactus" varieties, perhaps, failed to create so magnificent a display as last year, when they were exceptionally fine. But the Pompons were as nice as ever, and the few single-flowered ones shown were magnificent, whilst in the extent of the exhibition we believe there was little to regret. As will be seen below there was a number of novelties voted worthy of the National Society's First-class Certificate.

SHOW AND FANCY BLOOMS INTERMIXED.

The best exhibit of sixty blooms, distinct, was a collection of brightly-coloured, clean, not excessively large blooms, from Mr. J. WALKER, Thame, Oxon. The prettiest varieties in this extensive collection were the following: Wm. Powell, yellow; Sydney Humphries, rosy-purple; Florence Tranter, white, edged rose; Daniel Cornish, bright crimson; Arthur Ocock, a brighter crimson; Hercules, yellow, flaked, and irregularly marked with crimson; Kathleen, pale lilac, with light centre; Muriel Hobbs, a delicate but rich shade of yellow; Herbert Turner, white, or palest blush; Eclipse, a moderately-sized bright but intense scarlet; Maud Fellowes, pale purple with light centre; Virginale, whitish, but edged deeply with bright purple; J. C. Vaughan, yellow; J. S. West, purple shade of crimson, with yellowish centre; Mrs. Gladstone, blush-pink centre, cream-coloured; Duchess of York; John Walker, white; Mrs. Langtry, buff, deeply edged red; and Victor, deepest crimson. Close upon the heels of Mr. Walker was the Slough specialist, Mr. CHAS. TURNER, of the Royal Nurseries, whose blooms were generally a little smaller, but very praiseworthy; John Bennett, a red and buff flower, was the most distinct in this collection, but many others were of pretty tints. Mr. S. MORTIMER, of Farnham, was 3rd.

Mr. CHAS. TURNER had the satisfaction of winning the 1st prize for a collection of forty-eight blooms, distinct; and as being a first-class collection of that number of varieties, we append the names thereof: Jas. Cocker, Harrison Weir, H. Walton, Mrs. W. Slack, Imperial, Grand Sultan, Geo. Rawlings, Constance, John Standish, Maud Fellowes, Major Bartlett, Victor, Rev. J. B. M. Camm, Alice Emily, J. T. West, and Wm. Keith, back row; Mrs. Gladstone, Duke of Fife, Clara, Crimson King, Jno. Bennett, Gloire de Lyon, Prince of Denmark, Mrs. David Saunders, Shirley Hibberd, Earl of Ravensworth, Prince Bismarck, Hon. Mrs. Windham, States-

man, Goldfinch (a very pretty-coloured variety, being buff with crimson edge), Dante, and Miss Cannell, centre; and Wm. Powell, Ethel Britton, Duchess of York, Matthew Campbell, Goldfinger, John Forbes, Jno. Hickling, John Walter, A. Ocock, R. T. Rawlings, Arthur Rawlings, Mrs. Saunders, Hope, Colonel, Flag of Truce, and Sunbeam, at front line. The position being reversed in this class. Mr. J. WALKER, Thame, was the exhibitor of the 2nd prize collection; and he was followed by Messrs. KEYNES, WILLIAMS & Co., Salisbury, and Mr. S. MORTIMER, Farnham, in the order given.

Next in importance was the class for thirty-six blooms, distinct, and it was won by Mr. W. TRESEDER, of Cardiff, who appears to be showing Dahlias with increasing success. A point that should be counted to the credit of this exhibitor was the fact that he attached a label to each bloom, and these were written plainly, an uncommon event at a Dahlia show. These blooms excelled most in point of colour. Mr. G. HUMPHRIES, Kingston Langley, Chippenham, was very little behind the Welshman, however, and the judging must have been by points only. The 3rd place was taken by Messrs. KIMBERLEY & SON, Stoke Nursery, Coventry; and Mr. M. V. SEALE, Sevenoaks, was 4th.

In the twenty-four blooms, distinct, class, the 1st prize went to Mr. G. HUMPHRIES, who rather narrowly beat Messrs. KIMBERLEY & SON; Mr. M. V. SEALE, Sevenoaks, was 3rd; and the 4th position fell to Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley.

The best twelve blooms, distinct, were from Mr. J. STREDWICK, St. Leonards, who had among other varieties Prof. Fawcett, Colonel, Crimson Ring, Warrior, Mr. Campbell, T. J. Saltmarsh, John Hickling, Dazzler, Mr. Harris, and Our President; these blooms were very praiseworthy. The 2nd prize went to Mr. J. R. TRANTER, Henley-on-Thames; and the 3rd to Mr. W. BAXTER, The Nurseries, Woking.

Fancy Blooms.—The best twelve blooms, distinct, in this section, where the petals are all more or less flaked, tipped, or edged with a secondary colour or tint, was from Mr. J. WALKER, and he staged the following varieties: Rebecca, Mrs. Mortimer, a large, yellow bloom, slightly marked, at centre of each petal with pale purple; S. Mortimer, Duchess of Albany, Buffalo Bill, Comte de la Saux, Hercules, Prof. Fawcett, Choister, Mrs. Saunders, Dorothy, and Rev. J. B. M. Camm. Following Mr. Walker was Messrs. KEYNES, WILLIAMS & Co., who had a very large proportion of yellow and buff varieties, only one being purple; and Mr. G. HUMPHRIES was 3rd.

Cactus blooms.—In these classes was the greatest advancement evident. The character of the blooms has been changed exceedingly during the last few years. The 1st class was for eighteen bunches of six blooms each, and the winners were Messrs. J. BURRELL & Co., Cambridge. The most conspicuous and attractive varieties in the stand were Regular, crimson; Mrs. Peart, white; Starfish, scarlet; Charles Woodbridge, crimson; Harmony, a charming variety of distinct tints; Lucius, a narrow-petalled scarlet; Fantasy, one of the most distinct; Arachne, white and scarlet; Night, exceeding deep; and Lady Penzance, a lovely clear yellow. Messrs. KEYNES, WILLIAMS & Co. were 2nd, and they included several new seedlings. Of these we well liked Exquisite, a reddish-salmon self; Captain Broad, an uncommonly bright scarlet, but of not quite the florist's best form; Radiance, Lady Lonsdale, Wallace, and others are promising. The 3rd prize was taken by Messrs. J. CHEAL & SONS, and the 4th by Mr. G. STREDWICK.

The best twelve bunches in as many varieties came from Mr. S. MORTIMER. The varieties were Mary Service, Fusilier, Harry Stredwick, Keynes' White, Lady Penzance, Night, exceptionally good; Starfish, Miss A. Nightingale, Alfred Vasey, Chas. Woodbridge, Britannia, and Fantasy. The only weak bunch was that of Keynes' White. 2nd, Mr. M. V. SEALE, Sevenoaks; and 3rd, Mr. G. HUMPHRIES. There were five competitors.

The class for twenty-four blooms, distinct, is a disappointing one. The lovely Cactus varieties are best shown in sprays. Their beauty is lost on the flat surface of the show boxes. The 1st prize was awarded to Messrs. J. BURRELL & Co., the 2nd to Messrs. KEYNES, WILLIAMS & Co., the 3rd to Messrs. J. CHEAL & SONS. There were eight competitors.

Pompons.—It is pleasing to note a greater tendency on the part of exhibitors to show the blooms of this type in typical condition in regard to size. The largest class for these was for twenty-four bunches, distinct, ten blooms of each. The 1st prize went to Mr. M. V. SEALE, whose exhibit included, for the most part, the best types of this section. Particularly pretty were Bacchus, Dr. Finn, Eva, Sunny Daybreak, Rosebud, Emily Hopper, Jessica, Ernest Harpe, Adrienne, Amber Queen, Phoebe, Little Sweetheart, and Lilian; Messrs. J. CHEAL & SONS were 2nd, the flowers being very brightly coloured, but scarcely so refined as those in the premier exhibit; 3rd, Mr. C. TURNER. There were four exhibitors in this class.

The winners of the class for twelve varieties were Messrs. BURRELL & Co., and they staged the following varieties: Bacchus, George Brinckman, Arthur West, E. F. Jungker, Janet, Tommy Keith, Emily Hopper, Eurydice, Whisper, Douglas, Nerissa, and Isabel; Mr. G. HUMPHRIES was a good 2nd, showing pretty little blooms of nice colour; and Mr. J. STREDWICK was 3rd.

Single-flowered Varieties.—There were only two exhibits in the class for twenty-four bunches distinct, ten blooms of each.

The prettiest flowers in the 1st prize stand of Messrs. J. CHEAL & SONS, were Mrs. Coninck, white centre, purple edge; Cleopatra, exquisite in form, and a good crimson self

Donna Casilda, in which three tints at least may be observed, but which reflexes rather badly; Formosa, scarlet self; Beauty's Eye, a distinctly marked, but rather less-refined flower than many; Miss Morland, crimson; Aurora, and Duchess of Marlborough. We include the last-named variety from its fine colouring, but its cup-like form is by no means deserving of encouragement. The 2nd prize went to Mr. SEALE, who had also a pretty lot of flowers.

AMATEURS.

Show and Fancy Blooms Intermixed.—The exhibits from amateur growers were eminently satisfactory. The 1st prize for these was won by Mr. BURGIN, St. Neot's, Hunts, who showed large blooms of good quality, composed of show and fancy varieties in almost equal proportion; T. ANSTISS, Esq., Brill, was 2nd, and he had a very fine bloom of Majestic, and some others; T. HOBBS, Esq., Bristol, 3rd. There were five or more exhibitors.

The winner of the class for eighteen blooms distinct, was Mr. R. C. WEST, Northlands, Salisbury, who had a very even lot of high-class blooms.

Show Varieties Only.—The best twelve blooms were from Mr. S. COOPER, Chippenham, who had nice blooms, but neither this exhibit, nor the only other exhibit in the class, had names attached to the varieties.

C. F. KEEPER, Esq., 59, Sunny Hill Road, Streatham, S.W., had the best six blooms, showing Mrs. W. Slack, Victor, R. T. Rawlings, Miss Cannell, Lord Chelmsford, and Duchess of York; Mr. E. WEST, Jr., Henley-on-Thames, was given 2nd place; and H. A. NEEDS, Esq., Horsell, Woking, the 3rd.

Fancy Varieties.—The best exhibit of twelve blooms was from Mr. R. BURGIN, St. Neot's, whose blooms were of capital quality. Frank Pearce was uncommonly good, and the remaining varieties were Duchess of Albany, Lottie Eckford, Mrs. N. Halls, Peacock, Gaiety, Rev. J. B. M. Camm, Mrs. Saunders, Dazzler, Henry Eckford, T. W. Girdlestone, and Matthew Campbell. The 2nd prize was won by Mr. S. COOPER, Chippenham; and the 3rd by T. ANSTISS, Esq.

Mr. R. C. WEST had the best collection of six blooms, showing the Rev. Camm, General Grant, Duchess of Albany, Emin Pasha, Mrs. J. Downie, and Comte de la Scaux; 2nd, Mr. E. JEFFRIES, Langley Burrell, Chippenham.

Cactus Blooms.—The best collection of twelve varieties in bunches of six blooms was from Mr. R. KEEBLE, gr. to F. W. SHARP, Esq., Twyford. He had in excellent condition the varieties Miss A. Jones, J. E. Frewer, Starfish, Matchless, Mrs. Montefiore, and Beatrice. A good 2nd was Mr. J. HUDSON, Gunnersbury House Gardens, Acton, who had smaller flowers, but varieties most characteristic of the type; Arachne, Fantasy, Regulus, Starfish, and others were very good. 3rd, Mr. W. MIST, Ightham, Sevenoaks.

The best six were from H. A. NEEDS, Esq., Horsell, Woking; he staged Starfish, Gloriosa, Matchless, Charles Woodbridge, Mrs. Wilson Noble, and Mrs. Barnes. Mr. R. C. WEST, Northlands, was 2nd, and Ed. MAWLEY, Esq., 3rd.

The best collection of nine varieties in bunches of three blooms was from H. A. NEEDS, Esq. In this stand were excellent blooms of Miss A. Nightingale, Lady Penzance, Chas Woodbridge, Starfish, and Harry Stredwick.

Pompons.—The best six bunches of ten blooms each were from Mr. G. WYATT, gr. to S. HILDITCH, Esq., Twickenham; these were very pretty little blooms, and the varieties as follows: Little Sweetheart, Phoebe, Tommy Keith, Dr. Jim, Nerissa, and Bacchus; it was a very praiseworthy exhibit. Mr. J. HUDSON was 2nd, and W. C. PAGRAM, Esq., Weybridge, 3rd. The same number of varieties in bunches of six blooms only were best from Mr. R. C. WEST, whose blooms of Bacchus, Dr. Jim, Emily Hopper, and Sunny Daybreak were very good; 2nd, C. F. WOOD, Esq., Heathfield, Reigate; and 3rd, Mr. R. BURGIN, St. Neot's.

Single-flowered Varieties.—T. W. GIRDLESTONE, Esq., of Sunningdale, Berks, had the best exhibit of six varieties, in sprays of ten blooms each, and each of these varieties was exquisitely pretty: Naome Tighe, yellow, with reddish ring around the disc; Donna Casilda, purple and red; Polly Eccles, orange buff, with brownish crimson ring; Puck (new), light brown, with intense ring of deep crimson; Eric (new), of exquisite form, and peculiar satiny tint; all these were really attractive. Mr. JAS. HUDSON was 2nd, with more showy varieties.

The same number of varieties, in bunches of six blooms, were best from Mr. ED. MAWLEY, the varieties W. C. Harvey, Miss Roberts, Demon, and Northern Star being very good. J. PETERS, Esq., Horley Station, was 2nd.

Dahlias in Decoration.—The prettiest "shower" bouquet was one from Mr. W. TRESEDER, Cardiff. It was composed of blooms of Cactus Dahlia Mabel Keith, a variety with blooms having yellow-tinted centre, and outer petals of mauve. With well-coloured Croton leaves, sprays of Asparagus plumosus, and the usual ribbons, a very pleasing effect was produced. Mr. M. V. SEALE, Sevenoaks, was 2nd.

The best epergne was arranged by Mr. HUDSON, Gunnersbury House, Acton. Pompon and single-flowered varieties were alone used in this case; and Mr. E. MAWLEY, Rosebank, Berkhamstead, had the best vase of Dahlia blooms. In this class the 1st prize exhibit was well but not heavily furnished with blooms; the vase gaining 2nd prize, on the other hand, being insufficiently showy, apparently through a desire to avoid crowding.

OPEN CLASSES.

The class for eighteen varieties of Fancy single Dahlias, as shown in bunches of twelve blooms, brought a delightful exhibit from Mr. T. W. GIRDLESTONE, the President of the Society. The Fancy single Dahlias stand the same relation

to the self-coloured and edged flowers as to the Fancy Show Dahlias to those technically known as Show Dahlias, and they are either striped or tipped, some lighter colour being on a dark ground.

Nearly the whole of Mr. Girdlestone's blooms were new varieties of his own raising, such as Tommy, yellow, heavily flaked and pencilled with bright crimson; Violet Forbes, white, broadly edged with deep crimson; Ganem, orange, flaked with crimson; Nan, bright red, broadly margined with white; Tommy Tucker, orange-scarlet, slightly flaked; Bal Masque, maroon and purplish-crimson, tipped white; Princess Petula, yellow, tipped and flaked with pale purple; Creole, cream, with side margins of bright crimson; Splosh, yellow, flaked and striped with dark crimson; Ruy Blas, orange-salmon, striped with dark orange-red; Louise, side margins crimson, with a flame of white reaching to the tip; Suzette, white, with side margins of pale brick-red, and with these, Folly, Trilby, Jeannette, Jack Sheppard, and Phyllis, probably one of the best stands Mr. GIRDLESTONE has ever set up; Mr. M. V. SEALE was 2nd, with such pretty varieties as Tommy Harter, Emmie, Paragon, Folly, Dorothy Seale, Gulielma, Duchess of Albany, Phyllis, &c.; Messrs. J. CHEAL & SONS were 3rd. All three collections were remarkably good.

The best six blooms of any dark Dahlia were those of Rev. J. Godday, shown by Mr. J. WALKER; Mr. GEO. HUMPHRIES came 2nd; and Mr. S. MORTIMER 3rd, both with Arthur Rawlings. Six blooms of any light, not yellow, 1st, Mr. R. E. WEST, with Mrs. Gladstone; Mr. J. R. TRANTER came 2nd, with the same; and Mr. J. WALKER 3rd, with Mrs. Morgan. Six blooms of a yellow Dahlia, 1st, Mr. J. WALKER, with J. Hickling, very fine; 2nd, Mr. S. MORTIMER; and 3rd, Mr. M. V. SEALE, with R. T. Rawlings. Six blooms of a red variety, 1st, Mr. S. MORTIMER, with James Stephen; 2nd, Mr. R. E. WEST; and 3rd, Mr. SEALE, both with Duke of Fife. The best white was John Walker, from Mr. S. MORTIMER; Mr. J. WALKER was 2nd; and Mr. WEST, 3rd, with the same. With six blooms of any other colour Mr. SEALE was 1st, with Duchess of York, no other prizes being awarded. The best tipped Dahlia was Comedian (fancy), shown in fine character by Mr. J. WALKER; Mr. SEALE was 2nd, with Mrs. Saunders; and Messrs. J. E. FREWER & Co., Stowmarket, 3rd, with Peacock. The best striped was Rebecca (fancy), from Mr. J. WALKER; Mr. T. ANSTISS was 2nd, with Emin Pasha; and Mr. MORTIMER, 3rd, with Duchess of Albany. Mr. J. WALKER had the best six blooms of any tipped Dahlia, staging Miss Cannell; Mr. MORTIMER was 2nd, with Rosamond; and Mr. SEALE, 3rd, with J. T. WEST.

The Silver Cup given by P. A. Fellowes, Esq., for the best bloom, show or fancy, in the exhibition, was awarded to Mr. J. WALKER, for the yellow self William Powell. The special prizes offered by Thomas Hobbs, Esq., for the best show and also for the best fancy Dahlias exhibited by amateurs, were won by Mr. R. BURGIN, St. Neot's: the first with self Arthur Rawlings, the second with fancy Frank Pearce. The special prizes offered by Mr. A. DEAN for the best bunch of a white Cactus Dahlia, was taken by Messrs. KEYNES, WILLIAMS & Co., with Keynes' White. The special prize offered by Mr. R. DEAN for the best bunch of a new Cactus Dahlia exhibited for the first time, was won by Messrs. J. BURRELL & Co., with Lucius.

SEEDLING DAHLIAS.

But very few of the show or fancy type were produced as new. Mr. G. HUMPHRIES received a Certificate of Merit for David Johnson, a promising self of a salmon colour, the reverse of the petals slightly flushed with purple; and the same award was made to Messrs. KEYNES, WILLIAMS & Co., for fancy Dahlia Watchman—yellow ground, heavily flaked and striped with dark crimson; a finely-formed flower of a promising character. Pompons Snowflake (SEALE), a beautifully-formed pure-white variety; and Claribel (C. TURNER), pale ground tipped with deep purple; and Pompon Cactus Mrs. Holford (CHEAL), as a garden variety received the same award. Cactus Magnificent (STREDWICK), soft pale salmon; Lucius (BURRELL), bright orange-scarlet—very fine; Clown (KEYNES & Co.), dull red tipped with white; Countess of Lonsdale (KEYNES & Co.), orange-salmon tipped with purple; and Antelope (BURRELL), bright corise-scarlet, all received Certificates of Merit. As did also single flowered Leslie Seale (SEALE), dark crimson ring margined with pale lilac; and Eric (GIRDLESTONE).

Non-competitive Exhibits.—Mr. J. R. BOX, West Wickham and Croydon Nurseries, showed sprays of fine double flowering tuberous Begonias, cut from the open ground. Mr. JOHN GREEN, Dereham Nurseries, Norfolk, showed a considerable variety of Dahlia blooms, and included an immense flower from a seedling; this was named Red Rover, and was 8 inches across. It is a brilliant colour, and about equal "Cactus" form to the old Juarezii. Messrs. DOBBIE & Co., Rothsay, N.B., furnished a stand with Dahlia blooms, chiefly of the Pompon and "Cactus" sections; and another such collection was shown by Mr. THOS. S. WARE, Hale Farm Nurseries, Tottenham. Messrs. J. FEED & SONS, Roupell Park Nurseries, Norwood Road, London, in addition to a collection of Dahlia blooms, had also a few hardy flowers. And Messrs. CARTER, PAGE & Co., London Wall, E.C., had a very showy stand of Dahlia flowers.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 6, 7, 8.—The first show of the season by the National Chrysanthemum Society was held in the Royal Aquarium, Westminster, on the above dates. There were few

Chrysanthemums staged, but a large display of Dahlias and Gladioli blooms made an exhibition of some attractiveness. Some of the cut Chrysanthemums, and the single-flowered Dahlias especially, soon became the worse for the hot atmosphere of the building, and on the second day of the show these presented a much faded appearance. Cut flowers of Chrysanthemums, with few exceptions, were very poor.

CHRYSANTHEMUMS.

There appeared to be only one exhibit in the class for twelve bunches of Chrysanthemums, distinct, and it was shown by Mr. ERIC F. SUCH of Maidenhead. We noticed no new variety of importance in the collection.

Mr. ERIC F. SUCH had the best six bunches of Chrysanthemums, and his exhibit included Harvest Home, Piercy's Seedling, and others. The same exhibitor won 1st prize for the best dozen blooms of an early-flowering variety, other than Madame C. Desgranges and its sports, showing Lady Fitzwigram.

The best dozen blooms of Madame C. Desgranges were from Mr. W. Perrin, gr. to C. W. RICHARDSON, Esq., Sawbridge-worth; whilst slightly smaller blooms from Mr. Chas. Crooks, gr. to the Dowager Lady HINDLIP, Hadsor House, Droitwich, were given 2nd prize.

Miss DEBENHAM, St. Peter's, St. Albans, won 1st prize for twelve bunches of Pompons. Her varieties were Madame Galeus, Mdle. Jolivat, California, Alice Butcher, Précoceité, Piercy's Seedling, Mrs. Cullingford, and Strathmeath. Mr. E. F. SUCH was 2nd; and Mr. S. J. COOK, gr. to A. N. STEPHENS, Esq., Holmwood, Hendon, 3rd.

Mr. NORMAN DAVIS, Framfield, Sussex, showed very well in the class for a collection of cut flowers of Chrysanthemums, any type. The blooms in most cases were of good size and in fine character, especially Harvest Home, Mrs. Hawkins, Mdle. Marie Masse, Lady Fitzwigram, &c.

A very handsome epergne was tastefully decorated with Chrysanthemum blooms, and suitable greenery for relief, by Mr. W. C. VINCE, Spring Villa, Thornhill Road, Leyton, who was 1st in this class; Mr. J. ROSE, 23, Charlotte Street, Plumstead, being 2nd.

Mr. W. WELLS, Earlswood Nurseries, Redhill, showed a collection of cut Chrysanthemums in variety. Among these were noted nice bunches of Bronze Bride, Harvest Home, Madame Marie Masse, Arthur Crepey (yellow), Longfellow, Albert Chausson, Sam Barlow, Mychett White, &c. Mr. W. WELLS, was also awarded a First-Class Certificate for Chrysanthemum Louis Lemoine, a sport from Grunerwald.

Mr. H. J. JONES had a group of Chrysanthemums in pots, faced by plants of tuberous and fibrous-rooted Begonias, Dracenas, Caladiums, &c. Among the plants were several of a new, early, white-flowering Chrysanthemum named May Manor. It is of a large size, white, with lemon-coloured centre, and will be useful (First-class Certificate). Mr. JONES had fruits also of a new Tomato named Challenger.

Mr. J. H. WITTY, Nunhead Cemetery, had a circular group of Chrysanthemums in pots, a very meritorious one.

Messrs. CANNELL & SONS, Swanley, Kent, showed heads of fine Cockcombs, and cut flowers of the earlier flowering Chrysanthemums; and Mr. J. R. CHARD, Stoke Newington showed some epergnes, very tastefully decorated with Chrysanthemum blooms.

DAHLIAS.

Mr. JNO. WALKER, nurseryman, High Street, Thame, took the leading prize for forty-eight blooms of Dahlias, in not fewer than thirty-six varieties; Mr. CHAS. TURNER followed. Mr. J. WALKER was also most successful in the class for thirty-six blooms, distinct.

For twenty-four blooms, distinct, Mr. GEO. HUMPHRIES, Kington Langley, Chippenham, was 1st; and in a similar class reserved for amateurs and gardeners, Mr. T. AUSTIN, Brill, Bucks, was 1st.

Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge, had 1st prize for eighteen bunches of Cactus varieties, distinct; and Messrs. KEYNES, WILLIAMS & Co. were 2nd.

The 1st prize for twenty-four bunches of Pompon Dahlias, distinct, went to Mr. CHAS. TURNER, Royal Nurseries, Slough; and Mr. M. V. SEALE, Sevenoaks, was 2nd.

The best twelve bunches of Pompons came from Messrs. J. BURRELL & Co., Howe House Nurseries.

Mr. S. MORTIMER had 1st position for a collection of twelve bunches of Cactus varieties.

In the open class for twenty-four bunches of single-flowered Dahlias, distinct, Mr. F. W. SEALE, Sevenoaks, was 1st; and T. W. GIRDLESTONE, Esq., Sunningdale, Berks, had 1st prize for a collection of twelve bunches.

Mr. JNO. GREEN, Nurseries, Dereham, Norfolk, showed a collection of Dahlia blooms, in which the system of display was very distinct, and of considerable effectiveness.

Mr. T. S. WARE, Hale Farm Nurseries, had a very showy display of Dahlias upon the floor of the building. There was a large central cone or pyramid, and smaller ones at each corner. A few plants were interspersed in the exhibit, which was certainly a very gay one.

Mr. M. V. SEALE had a non-competitive exhibit of Dahlia blooms; and Mr. JNO. MATTOCK, New Headington, Oxford, had a stand furnished with fragrant Roses.

GLADIOLI.

Messrs. J. BURRELL & Co. had the 1st prize for a collection of Gladioli spikes, showing upwards of fifteen dozen spikes of blooms. Messrs. HARKNESS & SONS, Hitchin and Bedale, had also a display of Gladioli.

TRADE NOTICE.

FROM a prospectus just to hand we notice that the old-established nursery and seed business of W. H. Rogers, Red Lodge Nursery, Southampton, is to be made a limited liability company. Alderman W. H. Rogers, owing to advanced age, will retire from an active management in the business, but the three new directors will include Mr. A. C. Rogers, the vendor's son. The capital of the new company, W. H. Rogers & Son, Ltd., will consist of £20,000, out of which £13,000 will be paid for the acquirement of the business. The subscription lists opened on the 8th inst., and will close on or before Thursday, the 15th inst.

USEFUL INVENTIONS.

A POTATO-PLANTER, AND TURF AÉRATOR AND WEED-KILLER.

At the great trials of implements at the Royal Agricultural Society in 1896, Messrs. Ransome, Sims & Jefferies obtained a First and Second Prizes for Potato-planters; and this year they showed a new implement equal in all other respects to their first prize designs, but fitted with a finger-and-thumb contrivance, which picks up the Potato sets without injuring them, and by means of a cam the sets successively drop into their places in the furrow made by the plough fixed in front of the planter as if placed by hand. The machine not only opens the furrow, but marks the position of next bout.

The other implement, by the same firm of implement makers, is intended for aerating and renovating turf or old pasture land. It has a flat-cutting share 1 foot broad, which works at about 2½ inches below the surface, thus cutting through the roots of weeds, but leaving the turf whole and unimpaired. The slice of turf, guided by two side-blades, passes over the convex surface of the share and is deposited in its place in the rear, after being loosened in its passage. The machine is provided with small grubbers or harrow-tines, which loosen the subsoil as it passes along, facilitating the passage of the roots of the grasses to a greater depth in the soil.

Obituary.

ISIDORE BUSCH.—The death, in his seventy-seventh year, of this well-known American nurseryman, founder and head of the firm of Busch, Son, and Meissner, Grape Growing Co., in Buschberg, Missouri, and president of the Isidor Busch Wine and Liqueur Co., of St. Louis, took place at the latter place on August 5. With the death of Isidore Busch, who did much for Grape-culture, wine-manufacture, and horticulture generally in the United States, there passed away one of the few living Germans who took part in the revolutionary outbreak of March, 1848. For the part he took in that rising he thought it necessary to leave his native land soon afterwards. He chose America as his home, settling at St. Louis, and carrying on the cultivation of the Vine at a neighbouring town, called in his honour Buschberg. The deceased was one of the first, if not the first, who, on the appearance of the Phylloxera devastans in Europe, successfully imported American Vines to this side of the Atlantic. He was the author of a work on Vine culture, which has seen its fourth edition, and has been translated into five different languages. It was the firm of Busch which was the first in America to carry out the wholesale propagation under glass of Vines from single eyes. *Deutsche, Gärtner Zeitung.*

MR. MATTHEW RUSSELL OF HATFIELD, MYTCHETT, HANTS.—We regret to announce the death of Mr. Matthew Russell at the early age of 48, which took place on Saturday, August 27. Mr. Russell was well known to the cultivators of the Chrysanthemum, having been a very successful raiser of many fine seedlings that have been distributed by Messrs. Jones, Wells, and others, and was the raiser of the celebrated Mytchett White, also the Early Giant

Strawberry; he leaves behind many seedling Chrysanthemums of great merit, besides unbloomed seedlings. Mr. Russell was the third son of the late Matthew Russell of Fishergate, Sussex. He was gardener at Henfield for several years, and a member of the Adne Lodge of Freemasons. He came to Mytchett in 1892, where he made many friends, and was only recently elected a member of the Frimley Urban Council; he was buried at Frimley on Wednesday, August 31, many friends following him to the grave.

MURRAY FINCH-HATTON, EARL OF WINCHILSEA.—The Earl of Winchilsea died on Wednesday, Sept. 7, at Haverholme Priory, near Sleaford, in the presence of his family, after a long illness. His lordship, who is succeeded by the Hon. Henry Stormont Finch-Hatton, was the twelfth earl, having succeeded his half-brother in the title in 1887. When the Agricultural Congress was held in 1892, at St. James's Hall, during the Smithfield Show week, *Punch* published a cartoon which represented agriculture as seeking, but failing to find, the "missing word." "Union" was suggested by Lord Winchilsea as being the solution of the puzzle, and afterwards he acted on his own suggestion by establishing the National Agricultural Union, with the object of uniting agriculturists, and to induce them to co-operate in all matters of mutual interest. In season and out of season his lordship preached co-operation as applied to agriculturists, and in his newspaper, *The Cable*, he wrote article after article, driving home the same truth.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS. Above (+) or below (—) the Mean for the week ending September 3.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					10ths Inch.	Ins.	Percentage of possible Dura- tion for the Week.	Percentage of possible Dura- tion since Jan. 2, 1898.
	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 2, 1898.	Below 42° difference from Mean since January 2, 1898.	(More +) or less (—) than Mean for the Week.				
0 1 —	76	0	+ 168	— 228	10 +	173	37.3	20	28
1 1 +	95	0	+ 108	— 222	6 +	132	16.9	29	32
2 0 aver	106	0	+ 149	— 216	3 —	118	13.2	32	31
3 0 aver	115	0	+ 92	— 207	3 —	106	12.8	59	35
4 0 aver	110	0	+ 93	— 215	3 —	107	12.8	45	34
5 0 aver	127	0	+ 151	— 243	4 —	97	11.6	64	37
6 0 aver	98	0	+ 168	— 217	9 +	151	27.0	24	34
7 0 aver	109	0	+ 175	— 244	3 —	128	22.3	29	36
8 1 —	108	0	+ 191	— 156	5 —	115	18.9	59	41
9 1 +	106	0	+ 160	— 168	1 —	160	22.8	21	31
10 2 +	123	0	+ 265	— 134	7 —	124	22.7	33	35
* 1 +	139	0	+ 343	— 93	4 —	130	14.7	64	48

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending September 3, is furnished from the Meteorological Office:—

"The weather was unsettled, with occasional rain, in all parts of the kingdom, at the commencement of the week, and these conditions continued to prevail over the north of

Ireland and the greater part of Scotland until almost the end of the period. In other parts of the kingdom, however, the weather soon became very fine and dry, and at the close of the week this improvement was spreading northwards.

"The temperature differed very little from the mean for the time of year. The highest of the maxima were recorded on September 3, and varied from 83° in 'England, S.' and 81° in 'Scotland, E.' to 70° in 'England, N.W.' and to 68° in Scotland, N.' The lowest of the minima, which were registered on somewhat irregular dates, ranged from 40° in 'England, E. and S.W.' to 46° in 'Scotland, W.' and the 'Channel Islands.'

"The rainfall greatly exceeded the mean in Scotland, but was deficient over England and Ireland. Over the eastern and southern parts of England, and in the south of Ireland, the fall was very slight indeed.

"The bright sunshine was in excess in nearly all the English districts, but showed a deficiency in Ireland and Scotland. The percentage of the possible duration ranged from 64 in 'England, S.' and the 'Channel Islands,' and 59 in 'England E. and S.W.' to 21 in 'Ireland, N.' and to 20 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, SEPTEMBER 8.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, 12 blooms	3 0-4 0
Carnations, pr. doz.	1 0-3 0
blooms	1 0-3 0
Chrysanthemums, white, 12 blooms	1 0-3 0
Chrysanthemums, yellow, 12 blooms	1 0-3 0
Eucharis, per dozen	2 0-4 0
Gardenias, per doz.	1 6-3 0
blooms	1 6-3 0
Gladioli, white, doz.	0 3-1 0
sprays	0 3-1 0
Lilium Harris, per dozen blooms	4 0-5 0
Lily of the Valley, dozen sprays	0 9-1 6
Maidenhair Fern, per 12 bunches	4 0-8 0
Mignonette, per 12 bunches	2 0-4 0
Orchids:—	
Cattleya, 12 bms.	5 0-8 0
Odontoglossum crispum, 12 bms.	2 0-4 0
Pelargoniums, scarlet, per 12 bun.	3 0-5 0
— per 12 sprays	0 4-0 6
Roses, Tea, per doz.	0 6-1 0
— yellow (Pearls), per dozen	1 0-2 0
— pink, per dozen	1 6-2 0
— Safrano, p. doz.	1 0-2 0
— red, per dozen	0 6-1 0
Stephanotis, doz. sprays	1 0-1 6
Tuberose, 12 blms.	1 0-1 6

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz.	1 6—
Beans, Eng., Dwarf, per sieve	2 0-3 0
— Scarlet, in bus.	3 0-5 0
Beetroots, new, per dozen bunches	2 0-2 6
— p. tally of 60	2 6-3 0
Cabbage, open, doz.	1 0-1 6
— open, p. tally	5 0-7 0
Cauliflowers, English, per dozen	1 6-2 0
— per tally	7 0-8 0
Cress, doz. punnets	1 6—
Carrots, New, bunches, per dozen	1 6—
— washed, in bags	3 0-3 6
Celery, new, bundle	0 9-1 6
Cucumbers, p. doz.	1 3-2 6
Endive, English, p. score	1 6—
— French, per dozen	1 6—
Garlic, Eng., score	0 2—
Horseradish, New English, per bundle	2 0-2 6
— foreign	1 6—
Leeks, new, dozen bunches	1 6—
Lettuce, Cos, per doz.	2 0-3 6
— Paris Cos, home-grown, per doz.	2 0-3 0
Marrows, Vegetable, per dozen	1 6-2 0
— per pot	3 6-5 0
Mint, per dozen bunches	2 0-3 0
Mushrooms, house, per lb.	10-1 0
— out-door, lb.	0 2-0 4
Onions, Dutch, bag	2 6—
— green, per doz. bunches	1 6—
— Valencia and Oporto, cases	5 0—
— Picklers, in bags	2 6-4 0
— in sieve	1 6-2 0
Parsley, per dozen	1 0-2 0
— sieve	0 9-1 0
Potatoes, Bedford and Lincoln	60 0-90 0
Radishes, Round, breakfast, per dozen bunches (home grown)	1 3—
Salad, small, punnets, per dozen	1 3—
Shallots, good, per cwt.	10 0—
Spinach, per sieve	1 6-2 0
Tomatoes, English, per lb.	0 3-0 3½
— Belgian, cases, good	1 3-1 6
— Channel Isles, per lb.	0 2—
Turnips, new Eng., per dozen	2 0-3 0
— in bags, good	2 0—
Watercress, p. doz. bunches	0 3-0 6

POTATOS.

60s. to 90s. per ton. John Bath, 32 and 34, Wellington Street, Covent Garden.

REMARKS.—There is a fair demand for eating Apples, such as Ingestres, Quarrendens, Worcester Pearmain, and Duchess Favourite; all command a trade. Good Lettuce and good Cabbage are both short supply. Peas are practically done, and this week will nearly finish the supply of home-grown Victoria Plums; and owing to the continued drought Scarlet Beans have become a short supply, thus the price. The few Pines on sale are in the hands of a few dealers; of Mushrooms there are now both outdoor and house produce coming. The Spinach now coming is called by some New Zealand; by others, Patent.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	4 0-12 0	Foliage plants, per	dozen ... 12 0-36 0
Aspidistras, p. doz.	12 0-30 0	Heliotropes, p. doz.	4 0-6 0
— specimen, each	5 0-15 0	Hydrangeas, various,	per doz. ... 10 0-18 0
Calceolarias, per doz.	5 0-7 0	Liliums, various,	per dozen ... 12 0-30 0
Coleus, per doz.	3 0-4 0	Marguerites, p. doz.	6 0-12 0
Crassula, per doz.	12 0-24 0	Mignonette, p. doz.	4 0-6 0
Dracenas, each	1 0-7 6	Palms, various, ea.	2 0-10 0
— various, p. doz.	12 0-24 0	— specimens, ea.	10 6-34 0
Evergreen shrubs,		Polargoniums, doz.	9 0-12 0
in variety, p. doz.	6 0-24 0	Rhodanthes, p. doz.	3 0-6 0
Ferns, small, per		Scarlets, per doz.	3 0-6 0
dozen	1 0-2 0	Spiraeas, per dozen	6 0-9 0
— various, p. doz.	5 0-12 0		
Ficus elastica, each	1 0-7 6		
Fuchsias, per doz.	5 0-8 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Keswick,		Greengages, Eng.,	
bush. ...	3 0-3 6	per sieve ...	3 0-4 0
— Quarrendens,		— boxes, 48 ...	0 9 —
sieve ...	4 0-6 0	— 40 ...	1 0 —
— Suffolk, bush.	4 0-5 0	Melons, each ...	1 0-1 6
— Duchess Fa-		Nectarines, doz. ...	9 0-12 0
vourite, sieve...	5 0 —	— second quality	3 0-6 0
— Worcester Pear-		Peaches, per doz.	
main, per sieve	4 6 —	(according to	
— Manx Codling,		size) ...	9 0-12 0
per bushel ...	4 6 —	— Second quality	3 0-6 0
— Ingestres, sieve	3 6-5 0	— Californian	
— Various, cookers,		cases, about	
per bushel ...	2 6-4 0	7 dozen ...	5 0 —
Bananas, bunch ...	8 0-12 0	Pears, Williams,	
Cobnuts, per 100 lb.	40 0-42 0	foreign, in case,	
Figs, per dozen ...	1 0-1 6	36 3/8, 48 ...	3 0 —
Filberts, per 100 lb.	30 0 —	— in crates, 96 ...	12 0 —
Grapes, English,		— 108 ...	11 0 —
— Alicante ...	1 0-1 6	— 150 ...	8 0 —
— Hamburg, lb.	0 9-1 6	— Californian	
— second quality	0 6-0 9	Beurré Hardy, in	
— Channel Isles,		cases ...	5 3-6 3
per lb. ...	0 6-0 9	Pines, St. Michael	4 0-7 0
— Muscats, per		Plums, Bush, per	
lb. ...	2 0-2 6	sieve ...	2 3 —
Grapes, Muscats,		— Victorias ...	2 6-3 6
second quality ...	1 0-1 6	— Diamonds ...	2 6-3 6
Greengages, foreign,		— Pond's Seedling	3 0-4 0
sieve ...	3 0-4 0	— Various others	2 0-2 6

SEEDS.

LONDON: Sept. 7.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that this protracted drought, as might be expected, naturally restricts the sowing demand; meantime Trifolium, which is for the moment the article chiefly in request, is in meagre supply, and prices for same are consequently firm. There is no alteration this week in either Mustard or Rape-seed; winter Tares, however, come cheaper, and some choice samples of same are now obtainable for surprisingly little money. Giant seed Rye, on the other hand, is dearer. As regards bird seed, no fresh feature presents itself. Quotations for Peas and Haricots keep steady, and Linseed shows some improvement.

CORN.

AVERAGE PRICES OF BRITISH CORN (per imperial qr.), for the week ending September 3, and for the corresponding period of 1897, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1897.	1898.	Difference.
	s. d.	s. d.	s. d.
Wheat	35 7	28 1	- 7 6
Barley	25 11	27 8	+ 1 9
Oats	17 0	18 11	+ 1 11

FRUIT AND VEGETABLES.

GLASGOW: Sept. 7.—The following are the averages of the prices recorded since our last report:—Peaches, Scotch, 3s. to 8s. per dozen; Grapes, English, 1s. to 1s. 3d. per lb.; ditto, Muscats, 1s. to 1s. 6d. ditto; ditto, Scotch, 1s. to 1s. 3d. ditto; ditto, Guernsey, 6d. to 8d. ditto; Apples, Suffolk, 6s. to 7s. per bushel; ditto, Ecklinville, 7s. to 7s. 6d. ditto; ditto, Manx Codlin, 7s. to 8s. ditto; ditto, Americans, 16s. to 20s. per barrel; Plums, Violets, 1½d. to 2d. per lb.; ditto Orleans, 1½d. to 2d. ditto; ditto, Pershore, 8s. 6d. to 9s. 6d. per cwt.; ditto, Victoria (middle size), 2d. to 2½d. per lb.; do., Cambridgeshire, 1½d. to 2d. do.; Greengages, 1½d. to 2½d. do.; Cucumbers, 2s. 6d. to 3s. 6d. per doz.; Tomatoes, Scotch, 4d. to 7d. per lb.; do., English, 3d. to 4d. do.; do., Guernsey, 3d. do.; Lemons, Naples, 16s. to 25s. per case; Melons, home, 2s. to 2s. 6d. each; do., Valencia, 4s. 9d. to 5s. 9d. per case; Pears, Angers Williams, 4s. 3s. 9d. to 4s. 3d. do.; do., small, 3s. to 3s. 6d.; do., Duchesse, 3s. do.; do., Havre Williams, 6s. to 7s. do.; do., Wine, 4s. 6d. to 5s. 6d. per moly; Chestnuts, 4d. per lb.; Cobnuts, 4d. to 8d. do.; Oranges, 1s. 6d. to 2s. 6d. per dozen; Cabbages, 7d. to 10d. do.; Cauliflowers, 2s. 6d. do.; Mint, green, 6d. to 9d. per bunch; Onions, Valencia, 3s. 6d. to 5s. 9d. per case; do., Dutch, 3s. 3d. do.; Parsley, 1s. to 1s. 6d. per stone; Potatoes, best, 1s. do.; Peas, 1s. to 1s. 9d. do.; Lettuces, 6d. to 9d. per dozen; do., Cos, 6d. to 1s. do.; Radishes, 1s. per dozen bunches; Horseradish, 1s. 6d. per bundle; Mushrooms, 1s. to 1s. 2d. per lb.; Beetroots, 7½d. per dozen; Mustard and Cress, 3d. per punnet; Spinach, 1s. 6d. to 2s. per stone; Turnips, white, 2d. to 3d. per bunch; Celery, Scotch, 1s. 6d. per bundle.

LIVERPOOL: September 7.—Average of the prices at under-noted markets:—St. John's: Potatoes, 1s. to 1s. 2d. per peck; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 4d. to 8d. do.; Pine-apples, English, 4s. to 6s. each; Peas, 1s. to 1s. 4d. per peck; Cob-nuts, 8d. per lb.; do., 1s. per basket. Wholesale Vegetable Market: Potatoes, per cwt., Early Regents, 2s. 5d. to 2s. 9d.; Giants, 2s. 6d. to 3s.; Main Crop, 3s. 4d. to 4s.; Bruce, 2s. 8d. to 3s. 3d.; Kidneys, 3s. 6d. to 3s. 9d.; Turnips, 6d. to 8d. per dozen bunches; do., Swedes, 1s. 6d. to 1s. 8d. per cwt.; Carrots, 6d. to 9d. per dozen bunches; Parsley, 4d. to 6d. do.; Onions, foreign, 4s. to 5s. per cwt.; Lettuces, 6d. to 8d. per dozen; Cucumbers, 1s. to 2s. 6d. do.; Cauliflowers, 10d. to 1s. 10d. do.; Cabbages, 4d. to 8d. do.; Celery, 1s. to 2s. 3d. do.; Peas, 2s. 6d. to 3s. per bushel; Beans, 9d. to 1s. do.; do., Kidney, 8d. to 1s. per peck.

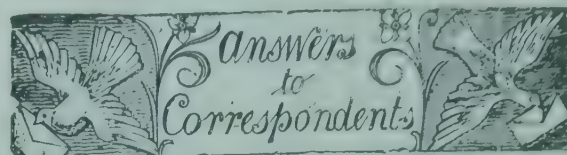
ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—A great show of fruit will be held in the Waverley Market, Edinburgh, on Wednesday and Thursday, September 14 and 15; and, fortunately for intending exhibitors, this is one week later than last year, as the season, on the whole, in the north is nearly a fortnight later than usual. Though the fruit crop can hardly be said to be an average one, there can be no doubt that a fine exhibition will take place. The money prizes offered on this occasion amount to £366. It may be useful to remind intending exhibitors from the south or distant parts, that the council of the Royal Caledonian Society have adopted the list of the Royal Horticultural Society's culinary and dessert varieties of Apples, Pears, and Plums; and all exhibits of fruit at the show of the Royal Caledonian Horticultural Society must be in conformity therewith. We believe we are correct in stating, that by gracious permission of the QUEEN, Mr. OWEN THOMAS, Royal Gardens, Frogmore, will exhibit largely. *A propos* of this show, we have been asked if it would be considered fair to admit Apples, Pears, Plums, Figs, or other hardy fruits, grown in separate glasses against walls, (a single fruit or a cluster of fruits in a glass, somewhat in the manner that Cucumbers used to be grown in glass-tubes), to compete against hardy fruits that had had no such protection?

CATALOGUES RECEIVED.

W. P. LAIRD & SINCLAIR, Dundee and Cupar, Fife—Bulbs.
SMITH & SONS, 16, Buchanan Street, Glasgow—Bulbs.
A. J. KEELING, Cottingham, Bingley, Yorks—Orchids, Stove and Greenhouse Plants, &c.
ROBERT VEITCH & SON, 54, High Street, Exeter—Bulbs, &c.
W. FROMOW & SON, Sutton Court Nurseries, Chiswick—Bulbs, &c.
FRED SMITH & CO., Woodbridge, Suffolk—Bulbs.
HOGG & ROBERTSON, 22, Mary Street, Dublin—Daffodils and Tulips.
SMITH & SIMONS, 16, Buchanan Street, Glasgow—Bulbs.
FOTHERINGHAM & KING, Corn Exchange, Dumfries—Bulbs.
JOHN WOOD, Penrith—(1) Bulbs; (2) Fruit-trees.
THOS. IMRIE & SONS, 123, High Street, Ayr—Bulbs.
COLLINS BROS. & GABRIEL, 39, Waterloo Road, London, S.E.—Bulbs.
W. SAMSON & CO., 8 and 10, Portland Street, Kilmarnock—Bulbs.
HOGG & ROBERTSON, 22, Mary Street, Dublin—Bulbs.
BENJ. R. CANT, Colchester—Roses.
OAKENHEAD & CO., 86, Patrick Street, Cork—Bulbs, Plants, Seeds, &c.
TOOGOOD & SONS, Southampton—Bulbs.
ROBERT PRINGLE, 40, Belvoir Street, Leicester—Bulbs.
KENT & BRYDON, Darlington—Bulbs.
MORLE & CO., 152, Finchley Road, London, N.W.—Bulbs.
ANT. ROOZEN & SON, Overveen, near Haarlem—Bulbs.
JNO. PERKINS & SON, 52, Market Square, Northampton—Bulbs.
F. MILLER & CO., 267, Fulham Road, London, S.W.—Bulbs.
T. SMITH, Daisy Hill Nursery, Newry—Bulbs.
CLARKE, BROS. & CO., 65, Scotch Street, Carlisle—Spring Flower Roots.
E. WEBB & SONS, Stourbridge—Bulbs, &c.
GEO. BRUCE & CO., 35, Market Street, Aberdeen—Bulbs, &c.
W. DRUMMOND & SONS, LTD., Stirling—Bulbs.
W. J. WATSON, LTD., Newcastle-on-Tyne—Bulbs, &c.

GARDENING APPOINTMENTS.

MR. R. PULLING, late General Foreman in the gardens, Croxteth Park, Liverpool, as Gardener to Lady MEUX, Theobalds Park, Waltham Cross, Herts.
MR. GEO. GUMMER, for the past five years general Foreman in the Grove Gardens, Stanmore, as Gardener to W. G. PHILLIPS, Esq., Berwick House, Shrewsbury, Shropshire.
MR. GEO. SCALES, until recently Gardener at Beech Grove, Mirfield, as Head Gardener to Mrs. PRESTON Ellet Grange, Lancaster.



CARNATION SEEDLINGS: J. E. The flowers are very good, but not better than others we have seen.

CHRYSANTHEMUM LEAVES ATTACKED BY FUNGUS: Subscriber. See answer to "B. W." in our last issue.

COLOURING OF LADY DOWNES' SEEDLING AND BLACK ALICANTE GRAPES: A. N. Provided the Vines were started in April or earlier, the fruit would be ripe in six months, so that the period of colouring would fall in what is commonly the warmest part of the season; and, providing the Vines have been pushed along whilst the days were long and solar heat abundant, fire-heat would only be required for the varieties named in the final stage in dull weather, or when cool days prevail, so as to admit of ventilation being afforded day and night. In such weather as we have lately experienced in the south, fire-heat will have rarely been necessary. Late Vines whose start was delayed as long as possible will have needed fire-heat, and may still need it till the fruit is ripe.

EMPLOYMENT: C. Smith. We fear that you have no redress, unless a written agreement exists between you and the employer. You might, as a yearly servant, sue him in the county court for a fortnight's wages, &c., as being entitled to one month's notice, you having had only fourteen days.

NAMES OF FRUITS: H. & S. From the one specimen you sent, we should take it to be Ecklinville Seedling.—Armstrong. The black Plum is Black Diamond, and the red one may be a small fruit of Pond's Seedling. We would prefer to see several fruits of each before being certain.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—Syria. An Artemesia, but cannot determine the species without flowers. Numerous species of Artemesia are cultivated in the Levant.—W. P. Bougainvillea speciosa; the plant will live out-of-doors, and flower in Devon and Cornwall.—W. B., Talygarn. 1, Cuscuta epithymum on Ulex europaea; 2, Spiraea discolor; 3, Ligustrum lucidum; 4, Spiraea Thunbergi; 5, Abies grandis.—J. Sparrow. Atriplex hortensis var. rubra.—A. H. H. Acacia neriifolia.—E. C. C. D. Melilotus arvensis.—C. Kilminster. 1, 2, and 3, Sueda maritima; 4, Atriplex littoralis; 5, Solanum dulcamara; 6, Salicornia herbacea.—F. C. V. 1, Melica uniflora; 2, Dactylis glomerata elegantissima; 3, Lavendula dentata (called French Lavender by some); 4, Helianthus rigidus; 5, Antonaria tomentosa; 6, Veronica spicata.—D. C., Dundee. Aeschynanthus speciosus.—J. M. Aeschynanthus speciosus.—J. McM. Clematis flammula.—W. Y. Stanhopea Wardii var. aurea.—H. E. The Dianthus is no doubt a seedling sport of the "Marguerite" section.—G. W. M. 1, Miltonia Regnelli; the barred flower, M. Clowesii; 3, Vanda corulea, not of the best type; the white flower, Phalaenopsis Aphrodite; 5, Coelogyne Dayana; 2 and 4 had their tickets loose, but the explanation of character above will render it easy to identify them.—J. E. C. The Adiantum resembles one of the forms of A. cuneatum in cultivation, though its peculiarity of not bearing fertile fronds, if constant, renders it distinct; 2, is Dictyogramma japonica variegata.—M. J. S. 1, Hæmanthus coccinea; 2, next week.—Haver. 1, Chamæpeuce diacantha; 2, C. Casabonæ; 3, Probably a Celsia; send when in flower.

PHILODENDRON LINDENI: Syria. The flowering of this species is not common, but given a strong plant, good soil, and a minimum warmth of about 65°, there should be no difficulty in getting the plant to flower. Monstera deliciosa and other species of Philodendron fruit readily under these conditions. The spathe is an interesting object.

COMMUNICATIONS RECEIVED.—Sydney Burton.—E. Webb & Sons.—E. Bennett.—R. D. L.—J. Laing & Sons.—W. M.—D. MacGregor.—H. E. Pantling.—D. P.—H. Correvon.—C. de B.—D. T. F.—H. V., Exeter.—D. Morris.—E. H. W. W. M.—T. Albertz.—Secretary Buda-Pesth Horticultural Exhibition, telegram and letter.—M. T. M.—J. B., Derby.—T. F.—T. Christy.—D. H. D.—A. C. F.—W. Roberts.—E. B.—T. S.—G. Y.—H. E. G.—D. J.—H. G.—A. Child.—J. R. P.—A. B. G. P.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 17, 1898.

FLOWERS OUT OF SEASON.

A PROTEST.

"WEE modest crimson-tipped flower,
Thou'st met me in an evil hour,
For I maun crush amang the stoor,
Thy slender stem;
To save thee now is past my power,
Thou bonny gem."

This sweet, pathetic wail of Burns' over the buried Daisy was suggested to my mind during last winter, whilst being conducted over a large establishment for the production of Lily of the Valley blooms, blanced Lilac, Narcissus, and other flowers essentially belonging to the advent of spring, and as I watched the contents of scores of boxes and flower-pots, shorn of their floral wealth, being tossed on the rubbish-heap to freeze and rot, I could not help wondering if amongst all the young gardeners employed by the firm there were any who felt an occasional remorseful feeling akin to that of the poet's, as they dashed on the heap box after box of roots which, had they been treated in a rational manner, would have made gay with their blossoms many a goodly parterre in the returning springtide, yielding, methinks, a degree of pleasure to the mind unapproached by the wan and sickly forced flowers of winter.

Were poor Burns, after a century's rest, to "revisit the glimpses of the moon" in search of a theme for his muse, he would find the "wee modest crimson-tipped flower" as fresh and lovely o'er field and fell as on that memorable morn when the painful and sympathetic feeling crept into his tender heart at the destruction of that "bonny gem." "The burn stealing under the lang, yellow broom," as clear and limpid as he beheld it in the heyday of his life. He would find "the milk-white Thorn that scents the evening gale," as pure and fragrant as on that day when he bade an eternal farewell to his Highland Mary on the banks of the Ayr. All these might tempt him to strike afresh that lyre which has so entranced "fair Scotia" and the world, since he passed like the snowflake on the river to the land of shadows. Nay, lover exclusively though he was of Nature unalloyed by art, he might even find a theme in the beauties of a modern sub-tropical garden, or in the happy arrangement of colours in an artistic display of carpet-bedding. He might even at Christmas-tide stay his footsteps for a moment in front of a nineteenth century florist's shop-window, and give expression to his wonder and admiration of the beauty therein displayed; but what would he say to the manner of its production? Methinks, lament would be followed by indignation.

In these degenerate days it would almost appear that a gardener's services were appreciated and valued only in proportion to his

ability in producing flowers of various kinds at an unseasonable time of year, the craze for which is largely on the increase regardless of all sacrifice and sentiment. To-day (September 9) I have just been shown by the manager of a florist's establishment a batch of Lily of the Valley in full bloom! Lily of the Valley forced into flower in suffocating glass-houses, when the garden is filled with Dahlias, Gladiolus, Mignonette, and a hundred other flowers, rich in beauty and in fragrance! An excuse may be offered for the production of forced flowers in winter, but assuredly no one would be so bold as to tender an excuse for the production of spring flowers by artificial heat in September, with the thermometer ranging from 80° to 90° in the shade.

One is often told that forced flowers tend to keep alive during the dreary winter months our love for the beautiful in Nature, but I venture to believe the very opposite to be the truth. Visit the flower-stalls of Covent Garden market in the spring-time, and tell me if the sight of the vernal beauty displayed there—enhanced, perchance, by occasional glints of sunshine—does not yield more real joy than half-a-dozen visits during the winter to see many of the self-same kinds of flowers fresh from the hands of the professional forcer and annihilator. Joy and delight in Flora's handiwork is not augmented by forcing the hand of the goddess, but rather by the well-marked intervals which occur between each display of her gifts. It is these lulls which stimulate enjoyment; forcing can only produce satiety.

Surely we have enough and to spare of winter flowers proper for our wants in Chrysanthemums, Violets, Orchids, Bouvardias, Ericas, Christmas Roses, and others, without encroaching upon those of a different season, involving the wasteful sacrifice of many millions of plants annually, by rousing them from their natural rest to reluctantly yield up their premature beauty, and then consigning them, perhaps, to the rubbish-heap.

As a rule, these plants, after yielding up their floral treasures under compulsion, are allowed to perish, it being found unprofitable to keep them for any length of time in order that they may regain their vitality. By this destructive process of the florist, and the encouragement given him by a thoughtless public, combined by the raisers of these plants hastening to meet the demands of the plant-forcers, are we not rapidly drifting towards a time when complaints will be heard of weakness and disease in those plants we are now treating in such an irrational fashion, and counter to all dictates of Nature? But even if this danger be non-existent, I still maintain that this manner of striving after riches on the part of the florist, and the want of discernment on the part of the public which encourages him, tend to deaden and destroy one of the finest feelings of the human heart. Had we never another winter flower than the Chrysanthemum, the capabilities of the plant are proved to be such that it would yield ample employment for the florist during the winter months without that sacrificial and deplorable work which now, to so great an extent, occupies his attention.

Dr. Nansen, leaving the good ship *Fram*, and after his long, arduous wanderings in the world of ice and snow, writes:—"At last came spring, with sunshine and birds. How well I remember that first evening a few days before the sun had appeared above the horizon, when we suddenly saw a flock of little auks sail past us along the mountains to the North. It was

like the first greeting from life and spring.' The feelings of the heart engendered at that moment by the flight of those little birds out-balanced all the sufferings and doubts of mind previously experienced, an ecstasy that comes but once in a man's life. Had Nansen carried about with him over the ice-bound land and sea a few of these little birds to remind him of "life and spring," would the daily sight of them have produced the feelings experienced by the flight of the wild birds? Assuredly not.

Feelings akin to these are produced in the hearts of most of us when the advent of spring reveals the first Primrose or Snowdrop. The heart leaps up, and impressions are produced which become fixed to cheer us through life, and perish only in death. But these enviable emotions are in danger of never being produced in the breasts of those who, throughout the bleak winter months cultivate, buy, sell, and use for the adornment of church, home, and person a plethora of those unnaturally produced flowers which belong essentially to other seasons. With these constantly under their eyes during the autumn and winter months, spring is robbed of its impressive charm, and the surfeited heart refuses to respond joyously to Nature when she unfolds her earliest treasures at the appointed time.

To me it is absolutely pleasureless to visit a spring-flower manufacturing establishment during the winter, and see the wan and sickly-looking plants of Lily of the Valley, and more sickly-leaved "white" Lilac, and nodding Daffodils being produced by the aid, usually, of darkness and heat, and all to gratify a joy-destroying fancy. Much rather would I linger over the memory of a little incident of childhood, which has been to me a joy for ever. Over half-a-century ago, under the spreading boughs of a great Beech-tree, whose lower branches lay on the greensward, grew a solitary Tulip of the olden type, far away from any garden. On its first discovery I stood and admired, not so much perhaps on account of its beauty, as of its appearance in a semi-wild state. I visited the spot daily and alone, watching the plant's development, flowering, gradual decay, and final disappearance. During the intervening months I frequently thought of the solitary Tulip, wondering if it would re-appear in the following spring. The season came round in due course, and brought with it joy to my childish heart in the re-appearance of the flower. When the bloom was again fully expanded, I brought my little sisters to the spot to see it, giving them the strictest injunctions to keep the place of its growth a profound secret, and not to cull the bloom, or otherwise disfigure the plant. The sight of this plant growing under such conditions produced a joy deeper, I believe, than any that ever came to me in after-life.

The latter-day florist has spared no pains in ransacking Nature's realms in search of subjects for forcing, and he has laid hands on almost every plant that will yield more or less willingly to his art in compelling it to produce its blossoms prematurely; but I always feel thankful when I remember that there are some of earth's treasures that defy his cunning, and that the Primroses, nodding wild Hyacinths, and Snowdrops, are left in peace to gladden our hearts in the returning spring-tide. Could these subjects be forced into flowering by December, the sheets of fragrant yellow blooms, the modest, drooping, snow-white belis, and the galaxy of blue, would quickly vanish from our

gardens and woodlands, and these typical flowers of childhood would soon be all but annihilated.

The male portion of creation, to a certain extent, encourages this art of the florist in the production of out-of-season flowers; but I am bound to say that the ladies are the greater culprits. It is to them, therefore, that we must appeal in redressing this evil, and ask them to set their faces against such a traffic in Nature's sweetest gift to mankind—a traffic calculated to blunt some of the finest emotions of the mind. Some of them have done much and highly praiseworthy work in the attempt to put a stop to the wholesale slaughter of small birds merely for the ornamentation of dress and head-gear. Why not, then, extend their good offices to the vegetable kingdom, and do all in their power to, at least, check a traffic in those flowers which are produced so greatly out of season, and in such an objectionable manner?

It may be urged, "What would the fair sex do without the forced flowers of winter to adorn their persons and halls during the festive months?" As already pointed out, there are enough and to spare of naturally-produced flowers in the winter season without the aid of those untimely productions which tend only to satiety, and to blunt our susceptibilities to the beauty of the natural flowers of spring and summer.

Another encouragement which is undoubtedly given to the professional forcer is the extravagant custom of employing large quantities of flowers at funerals.

"Sweets to the sweet," are Hamlet's pathetic words as he strews a handful of simple flowers in Ophelia's grave; and such unaffected acts produce deeper and more sympathetic feelings in the beholders than car-loadings of wreaths and other floral emblems.

When the wish is uttered, "No flowers," many shudder at the thought; but such notice is circulated either by the desire of the lost one, or of relatives who are left behind, and springs from the fear that the too common practice of sending such large quantities of floral tributes on such occasions tends to destroy rather than produce those feelings of sympathy and love which it is so wise to foster and cherish.

By all means let us cherish and foster the love of flowers; at the same time let us not violate nature, and let us hope that the time is not far distant when we shall feel it our duty to say with regard to the present methods of production and use of flowers—

"Ring out the old, ring in the new;
Ring out the false, ring in the true."

J. Lowrie.

NEW OR NOTEWORTHY PLANTS.

LONICERA HILDEBRANDIANA, COLLETT & HEMSLEY.*

ALTHOUGH our gardens are already well supplied with numerous species of *Lonicera*, some being very handsome shrubs, there is none among them that will at all compare in size of flower with the present novelty, for it is by far the finest species that has yet been introduced into cultivation, and may easily claim to be the prince of Honeysuckles. This grand shrub flowered in August with Mr. F. W. Moore in the Botanic Garden at Glasnevin, Dublin, probably for the first time in cultivation, and just about ten years after its discovery. As may be seen from our illus-

* *Lonicera Hildebrandiana*, Collett & Hemsley, in *Journ. Linn. Soc.*, v. 28, p. 64, f. 11.

tration (fig. 58, p. 219), it is the giant of the genus, its flowers being larger than those of any other known species, and as they are of a brilliant orange-scarlet, they make a fine display. *Lonicera Hildebrandiana* is a native of the Shan Hills, where it was discovered by Sir H. Collett in 1888, growing at 5000 feet elevation, and probably requires the temperature of an intermediate house for its successful cultivation. The leaves are stalked, $3\frac{1}{2}$ to 5 inches long, 2 to $3\frac{1}{2}$ inches broad, ovate, or elliptic-ovate in outline, rather abruptly and obtusely pointed at the apex, rounded at the base, and quite glabrous. The flowers are produced in pairs on short peduncles, in the axils of the leaves. The calyx is about one-third of an inch long, and shortly 5-toothed. The brilliant flame-coloured corolla is about 5 to 6 inches long, and is said to attain a length of 7 inches, the lips measuring $2\frac{1}{2}$ to 2 inches. N. E. B. [A notice of this species from the pen of Mr. W. Watson appeared in the *Gardeners' Chronicle* December 16, 1893, p. 742. Ed.]

THE CHRONICLE OF A LITTLE CORNISH GARDEN.

(Continued from p. 98.)

AUGUST.—Within a mile of my house is a road whose limiting western hedge-bank is gloriously and gracefully festooned by the interlacing growth of wild Clematis—"Virgin's Bower trailing airily." It is impossible to describe its infinite grace and freedom of growth, but it always impresses me with one gardening lesson, namely, that beautiful flowers are but a part of the æsthetic product of a beautiful plant. This is a lesson which cannot be sufficiently drummed into the ears of gardeners, who for the most part concentrate all their skill and labour on the task of producing wonderful flowers—often beautiful, but frequently simply monstrous—utterly regardless of the beauty afforded by leaf and stem, and by a plant's habit of growth.

A beautiful Rose—no matter how it has been produced—is a beautiful object, but it will not go far to help in the making of a beautiful garden unless the plant on which it grows has some of the grace and freedom of the Briar. It is as though our artists were to care only for some one feature of the human face, and, portraying that in full appreciation of its individual beauty, whilst disregarding all else, call upon us to admire their pictures of beautiful human faces. The whole of the plant is necessary for the full enjoyment of it, and in order that it may be an object of beauty, its growth must appear natural and unrestrained. This does not mean that a Rose-bush should not be pruned, and the herbaceous clumps left ever undivided, but that the more a plant can be let alone, compatibly with its health, the more beautiful will it be.

Gardeners, as a class, are by no means the best or wisest of garden critics. Like very many other people, they are apt to value a garden in proportion to the rarity of its contents, and to the amount of labour obviously bestowed on it. A painter, again, is by no means necessarily the best critic of pictures, for he, too, is led aside by technical details from an impartial view of the finished work. Too much and too intimate a knowledge of technique is a little apt to produce that form of blindness which causes inability to see the wood for the trees.

A flower-garden has—or should have—a purely æsthetic value, and the principles which operate in the production of a good vegetable-garden do not apply. To create a series of beautiful pictures, composed of numerous objects of great individual beauty, is the legitimate aim of flower-gardening; and this aim is not compatible with a desire to outvie one's neighbours in expensive masses of glaring colours, or to win prizes at shows for flowers larger than other people's. The persons most competent to express an opinion on a garden are they who possess a certain knowledge of gardening, a considerable knowledge of plant growth, a familiarity with all sorts of gardens, and much experience in the contemplation of objects from the point of view of beauty; and it is a wise act to occasionally obtain the verdict of such on one's garden.

The weather having broken up, somewhat of a lull has occurred in my garden's flowering. The Hollyhocks and summer flowers are over, and the Dahlias, Asters, Chrysanthemums, Sunflowers, and *Anemone japonica* are not yet producing more than occasional flowers. Roses and Carnations are blooming away merrily, however, and one wants little more—each offering us much variety of colour and scent; but I must abstain from saying more about these fascinating flowers. Far and away the most brilliant flower in bloom is *Lobelia cardinalis*, of which a couple of clumps have become well established, and are producing dozens of tall spikes of vivid scarlet blossoms. This plant requires shade and a rich soil, in order to thrive, and show its possibilities of beauty. The singular form of the individual flowers of the *Lobelia* at once strikes the attention. If one examines their structure, it will be seen that the five anthers have coalesced to form a tube from which, in the younger flowers near the apex of the spike, pollen may be easily pressed. Through this tube the style, with stigmatic surface concealed, gradually makes its way, pressing the pollen before it. In the older flowers, towards the spike's base, the stigmas will be found protruding from the tube (which is now empty of pollen), and exposing their papillar surfaces for fertilisation.

The Pentstemons are now at about their best, although they have been flowering for a couple of months, and will probably continue to bloom until October. Few flowers are more useful, as their flowering period is so long and their constitution hardy. For the most part, their colours are not brilliant, and are apt somewhat to pall, but, with the exception of the washed-out magenta ones, they are pleasant flowers to look upon. Of newer varieties I have grown, the best are President Carnot, purple, with white throat; Emile Deschanel, scarlet; and Mrs. F. Gordon, rose, with white throat. Still, a threepenny packet of seed will give plenty of plants with beautiful flowers, without the expense of buying named ones. I must not forget to mention the coral-coloured flowers of *Pentstemon barbatus*, a plant of which has been blooming for months past.

Another group of plants not as much grown as their beauty deserves they should be, are the *Potentillas* or *Cinquefoils*. Every shade of yellow, orange, and red is represented, and the plants are hardy, and of the easiest culture.

By far the most important flowers of the month, however, are the autumn-flowering *Phloxes*, about the most valuable of the many floral beauties which North America has given us. Perfectly hardy, very floriferous, of an infinite variety of colour, and of noble habit, *Phloxes* are, naturally enough, general favourites. Deeply-dug soil enriched with manure, and room to grow, are the two requirements of these plants. The varieties are extremely numerous, and a complete collection would require some acres. Of the few varieties I have, the best are the lilac *Eugénie Dautanvilliers*, with a large white eye; the orange-coloured *Etna*, the salmon and rose-tinted *Molière*, *Leonardo da Vinci*, pure white, with dark eye; and the snow-white *Avalanche*.

The very brilliant and conspicuous *Kniphofias*, *Tritomas*, *Flame-flowers*, *Torch Lilies*, or *Red-hot Pokers*, so many synonyms do they possess, are also very striking objects in the garden at present. I suppose it is much easier to grow these plants in Cornwall than in the northern counties, as mine have already grown into nice clumps, whereas, I understand, in many places they get killed by frost. Of them all, I think the grandest is *Kniphofia nobilis*, a variety of *K. aloides*, with its tall flower-stems, surmounted by immense orange-red spikes. *K. Burchelli*, whose flower-stem is marked with dark spots, still shows some bright red heads, with yellow bases, but it is past its best. The dwarf *K. comosa* is just beginning to show its bright yellow drooping flowers, and *K. serotina* is showing its flower-buds, which will not open yet.

The trellis which I so recently erected is now almost covered by *Tropæolum canariensis*, Sweet Peas, Vegetable Marrows, and Nasturtiums. What beautiful flowers these last are! Who has seen a *Nasturtium* of

bad or even poor colour? There are few flowers concerning which this question might safely be asked. Primroses, Phloxes, Pentstemons, even Roses, produce on occasion flowers of execrable colour. Sweet Peas, perhaps, may pass the test, and, it may be, one or two other plants. The Sweet Pea hedge which I "topped" in July is now rewarding me for my sacrifice by producing as great a mass of flowers as in June. These second flowers, however, are produced on shorter stems than were the first crop.

Convolvulus, which I am reluctant to destroy, yet dare not leave alone,

"White cups, whose wine
Was the bright dew yet drained not by the day."
Vernacular names for flowers are by no means always attractive or poetic, and it was no poet who first named this beautiful flower "Old Man's Nightcap."

Mignonette, Violas, Pansies, Campanulas, Fuchsias, Lychnis, and Snapdragons are the names of but a few of the plants now flowering. The time of preparation

Veitch & Sons, Limited, of the Royal Exotic Nursery, Chelsea. Both contained well cultivated examples, and both were the admiration of the numerous visitors. Mr. Mitford's exhibit included a specimen of every known hardy Bamboo. In addition small collections came from Mr. V. N. Gauntlett, of the Bamboo Nurseries, Redruth, and Mr. T. Ware, of the Hale Farm Nurseries, Tottenham. We now afford our readers illustrations of two out of four species, all of which were included in Mr. Freeman-



FIG. 56.—ARUNDINARIA NITIDA, TOGETHER WITH DETAILS OF EDGE AND BACK OF LEAF, ENLARGED 10 FOLD; AND A FULL-SIZED LEAF AND SHOOT.

I said that the perennial Sunflowers are only yielding a few advance blooms; but I am having a foretaste of their beauty in another North American composite, Rudbeckia Newmanii, whose dark-centred yellow flowers are being produced in great profusion. This is a very hardy plant, and, like most of the plants I grow, it simply wants deep cultivation, manure, and space to develop.

The weeds are making their last struggle for the year. Among others I notice the lovely white

for next year is beginning, and we now know the extent to which we have succeeded in attaining our ideal garden for 1898. Harry Roberts.

BAMBOOS.

At the meeting of the Royal Horticultural Society on July 26 last, two fine representative collections of Bamboos were shown by A. B. Freeman-Mitford, Esq., of Batsford Park, Moreton-in-the-Marsh, and Messrs. J.

Mitford's collection, namely, Arundinaria nitida, A. aristata, A. metallica, and Phyllostachys fulva, the figure of the first named being prepared from a plant in Messrs. J. Veitch & Sons' collection, this being the better plant. The plant measuring 7 feet in height, and 10 feet in diameter. The other two illustrations will be given in a subsequent issue. We append the following descriptive notes kindly furnished by Mr. Freeman-Mitford:—

Arundinaria nitida (Mitford), fig. 56.—A beautiful

and graceful *Arundinaria* from Northern Ssu Chuen. The slender purple stems grow to a height of upwards of 10 feet, so far as the plant has hitherto been proved. They, as a rule, do not branch until the second year, when there are but few leaves; but in the third year they are literally borne down to the ground by the weight of most brilliant foliage; and these three stages in the life of the stems give the plant a most graceful and attractive effect.

Mr. Mitford, in his *Bamboo Garden*, refers to this species as "By far the daintiest and most attractive of all its genus. *Arundinaria nitida* possesses the additional advantage of quite exceptional hardiness. . . . When the Bamboo garden was being formed at Kew, Mr. Bean came across it in Messrs. Veitch's collection at Coombe Wood, where it was then named *Bambusa nigra*, from which (a *Phyllostachys*), of course, it is absolutely distinct. At that time the only *Arundinaria* known to have black stems was the Himalayan *A. Khasiana*, and with this species the plant now under notice was conjecturally identified. As *Arundinaria Khasiana* accordingly, it was described by Mr. Bean in the *Gardeners' Chronicle*, and by myself in the *Garden*. Attention, however, was called to the subject by Mr. Gamble's monograph of the *Bambuseæ* of British India, from which it is clear that this *Arundinaria* agrees only in its purple stems with *A. Khasiana* (which is closely allied to, and indeed hard to distinguish from *A. falcata*), and, moreover, that there is not among the *Bambuseæ* of the Himalayas any known plant corresponding with it."

"After careful search, it was discovered that Messrs. Veitch's plant was raised from seed received in 1889 from Dr. Regel, the Director of the Botanic Garden of St. Petersburg, who had obtained the seeds from the Russian traveller, Mr. Potanin, who collected it in North Ssu-Chuen. The same plant was likewise detected in the herbarium of Dr. Henry, who found it in Hu-pei. As this *Arundinaria* had not hitherto been described (except, as I have pointed out, under a false title), it was necessary to give it a name, and I chose "nitida" as appropriate to its brilliancy and beauty" (see *Gardeners' Chronicle*, August 17, 1895, p. 186).

Arundinaria aristata (Gamble), fig. 57.—This interesting Bamboo is found at a height of 10,000 feet on the North Eastern Himalayan ranges in Sikkim and Bhutan. The culms grow from 8 to 12 feet high, with a diameter of half to six-tenths of an inch. The foliage is very pretty, the bright pale-green leaves hanging in most graceful clusters from the bending stems. The culms are yellow with reddish branchlets. There is a strong likeness between this species and *Arundinaria spathiflora*, but from minute distinctions in the flowers, Mr. Gamble does not hesitate to separate the two.

(To be continued.)

ALPINE GARDEN.

NEW AND RARE PLANTS FOR ROCKERIES.

(Continued from p. 283, vol. xxiii.)

Mandragora autumnalis,* Bertol., and *M. vernalis*, Bertol., are two varieties of the old *M. officinarum* of Lorné, common upon sea-shores in the very south of Europe. It grows chiefly in the Orient, where it was in great request because of the form of its big roots. Friend says:—"The root of the Mandrake is shaped like a Parsnip or Carrot, and is often forked. Fanciful persons have thought that, when thus divided, it bears some resemblance to the legs of a man, and the crafty money-seekers of the past were not slow at assisting the folly of the superstitious by artificially increasing the similitude, and then attributing to the plant supernatural powers. The Romans, even, called the Mandrake Semi-Homo, while the Greeks knew it as *Anthropomorphon*. So late as 1810 the images already referred to were to be seen exposed for sale in several of the sea-ports of France, and they were frequently bought by such as wanted

to have the passion of love excited, or to avoid disgrace in the domestic circle."

In the Middle Ages the roots of Mandrake were sold very dearly. The *Revue Horticole de Paris*,* published last year two very curious figures representing two of these roots that were brought from Syria.

The *M. autumnalis* has short-stemmed violet flowers, the stem being reddish, and flowers in September and October. It is believed that this species is the one spoken of in the thirtieth chapter of Genesis. The *M. vernalis* has white, greenish, or bluish flowers, and blooms in May. Both have big undulate leaves, and large roots. They should be cultivated in a dry and warm place with south-west aspect, or at the base of a wall. They are hardy here, and must be so in the midlands and south of England.

Mertensia lanceolata, D.C.—This is a herbaceous plant from the alpine regions of the Rocky Mountains, flowering here in May—June. The leaves are almost all on the stem (caulinares), very few being radicals; they are of a very light glaucous-green; the stems are single, erect, and slender; the flowers are pendent, of a very beautiful light blue, not so large as those of *M. virginica*, but as pretty as those. It is a very good addition to the herbaceous border, and to big rockeries; it requires a good deep soil and a dry place, for the roots suffer from humidity in their resting time.

Micromeria piperella, Benth., is a very dwarf-growing little shrubby plant from the south of Europe, odoriferous and nice. The stems are single, erect, covered with small and numerous leaves, and bear a spike of small pink flowers, that succeed one another on the stem from July till October. The plant requires a sunny and dry place.

Mimulus primuloides, Benth., is one of the nicest plants for rockeries, and one of the best of those from the mountains of New Zealand [?]. The plant is very dwarf-growing, and forms nice little tufts or rosettes. The leaves are covered with long hairs; from the centre grows a slender and thin stem, quite naked, bearing a very pretty flower of deep yellow; these stems are numerous, and succeed one another on the tufts from July till September. A very good plant, which should be planted in every rockery. It requires a half-sunny or sunny place, and light, fibrous soil. The plant may be increased by seeds or division.

The *Mimulus radicans*, Hook. f., from New Zealand, has a creeping stem and small, obovate leaves; the flowers are white, with a purple spot on the upper lip. It is not quite hardy with us, and does best in a damp place. (Figured in *Gard. Chron.*, July 7, 1883, p. 21.)

Moluccella frutescens, L. (*Ballota spinosa*, Link.).—A very rare little shrub, belonging to the Labiateæ, and growing in the very south of Europe; the stems are very ramose, and grow to 10 to 30 cent. (1 foot); the leaves are small and rare, and at their base there are one to three long and spiny bracteoles; the flowers (one to three) are white, and the upper lip is very hairy. It requires a hot position in the rockery, and is quite hardy in Switzerland.

Mulgedium albanum (*racemosa*), D.C., is one of the choicest of blue-flowering herbaceous plants; seeds of it were brought to me by Messrs. Levier and Sommer, on returning from their journey in the Caucasus, in 1890. It is a tall-growing plant, the stems ascending to 2 metres and even 3 metres in good soil. They are single, and bear at a third of their length a long spike of blue flowers, of which the stalks are reddish. They flower abundantly and freely from May till end of August.

Origanum Dictamnus, L. (*Amaracus Dictamnus*, Benth.) is one of the most interesting plants of Crete, where it grows in the fissures of the rocks in the low and mountain regions up to 4500 feet. It is a dwarf shrub, the stems of which are covered with round and white leaves, covered with a woolly pubescence just like cotton; the flowers are pink, and included in much coloured bracts of a deep

carmine. They are disposed in spikes, and appear from August till November. It should be planted in a small hole in a very sunny place in the rockery. It is liable to be injured by damp. The plant may be propagated by cuttings and seeds. (*Bot. Mag.*, t. 298.)

O. pulchrum, Boiss. et Heldr., is another very pretty Labiateæ of the Orient. It grows in the fissures of the rocks, and in the stones of the mountains of Eubæe in Greece, to an altitude of 5,500 feet. The leaves are obovate, glabrous, very fragrant and somewhat viscous; the flowers are of a very brilliant carmine-rose, and the numerous bracts are purple-mauve. It is a very showy little shrub, seldom seen in gardens, and flowers from August to October. We plant it in a stony soil in a sunny situation. In winter we cover it lightly, but I think that in the English climate it would stand the winter without being covered. It requires a dry and sunny place in the rockery, and may be increased by cuttings and seeds. *H. Correvon, Geneva.*

NURSERY NOTES.

MESSRS. JAS. McBEAN & SONS, COOKSBRIDGE.

MR. JAMES McBEAN is one of the most successful growers of flowers and plants for market in the county of Sussex, and, moreover, he is one who can boast that every shilling used in purchasing his land, building his houses, and establishing his business, has been earned by his own diligence, aided by his no less persevering sons. He started in business in a very small way less than twenty years ago.

His aim has always been to grow favourite flowers in quantity, and to grow everything well, and consequently the subjects cultivated have varied in the same degree as the fashion in flowers. Hence, when Orchid blooms were much in demand, Mr. McBean decided to invest in these plants on a limited scale, in spite of the fact that he had little knowledge of their culture. Feeling his way gradually and cautiously by buying only the cheap ones out of importations, he soon acquired remarkable proficiency in their cultivation, especially with the *Odontoglossums*, of which he has three fine ranges of glasshouses filled with plants in various sizes. The plants thrive in such a remarkable manner, that Mr. McBean considers that not only is degeneracy in the Orchids in which he has experience another name for bad cultivation, but that even the plants degenerating in some gardens can soon be grown into fine specimens in proper hands, though to grow such plants is more difficult than to grow even the worst of freshly-imported specimens. In proof of his contention, Mr. McBean pointed to a batch of *Odontoglossums* acquired by him from a private collection, and still bearing the record of the date of their importation, viz., 1883. These had been gradually declining for twelve years or so, before he got them but afterwards they quickly made good growth, and they have steadily improved. The same story of progress can be seen in all the houses, and especially in that containing the large specimens, all of which have bulbs of great size, of a rich dark green colour, often tinged with purple, and they bear thick, fleshy, green leaves, and in many cases stout flower-spikes, and yet these plants were the smallest of the different importations out of which they were bought. In obtaining choice varieties Mr. McBean has been very fortunate, for he has flowered some grand spotted varieties, a number of which occupy a prominent place at the end of the principal Orchid-house. There are some novel arrangements about the houses which are noteworthy, as they have some bearing on the good condition of the plants contained in them.

For instance, rain-water only is used, and many are the provisions made for its storage, but it was found that during long, dry summers, the rain-water in the tanks failed, and the problem was how to eke out the supply in such a manner as to tide over a dry time. The staging for the plants consists of a slate lower-

* *Flowers and Flower Lore*, vol. 1, p. 294.

* *Revue Horticole*, 1897, p. 131.

stage, for moisture, and an open wood-work one on which to stand the plants, and Mr. McBean had the lower one made water-tight, and with openings here and there over the water-tanks, so that the large amount of water previously wasted during the watering of the plants should always fall on this close stage, and thus return to the tanks again. Since that arrangement was made the supply has not failed. Another unusual feature is that the canvas blinds, which run on an iron and wire-frame about a foot from the glass do not run up and down, but from the middle to each end. They are not rolled up, and by this means the blinds are said to last longer.

Dendrobiums are another special feature at Cooksbridge, and the varieties of *D. nobile* and other showy kinds make very strong growths, and flower abundantly. In most of the houses there are Orchids suspended over the roof and on shelves near the glass, while the staging is principally occupied by decorative plants, such as *Kentias*, *Caladium argyrites*, *Asparagus plumosus*, *Crotons*, *Dracenas*, &c.

In one house are some fine specimens of *Dendrobium splendidissimum grandiflorum*, with very stout growths 3 to 4 feet long; the true *D. nobile nobilissimum*, with very strong pseudo-bulbs about 4 feet in length; the blush-white *D. nobile Ballianum* in all sizes; *D. n. Cooksoni*, and most of the other varieties in fine condition. *Dendrobium Dearei* is grown in quantity, and *D. bigibbum*, *D. formosum giganteum*, &c.

In the next house were observed plants of the true *Cattleya aurea*, some of the older plants being in flower and sheath; some good *Oncidium Papilio* and *O. Krameri*, and other showy species.

In another house are the cool-growing *Oncidium*s of the *O. Marshallianum* class, a batch of *Dendrobium*s ripening their growths, a good selection of *Cymbidium*s, and at the cool end a number of plants of *Oncidium macranthum*, with very large pseudo-bulbs and strong flower-spikes. Then there was a houseful of *Dendrobium*s, &c., in which *D. Wardianum* were completing their growth, and *D. Devonianum*, which some growers find difficult to manage, was very strong and healthy.

At the sunny end of the next house was a batch of varieties of *Lælia anceps* sending up spikes from even the smallest pieces much more profusely than they would if kept more shaded. In bloom here was a very handsome form of *Zygopetalum crinitum*, with ruby-red hairy lines on the lip in place of the dark blue usually seen; and very pretty were a quantity of plants of the green, white, and red *Saxifraga tricolor*.

CHRYSANTHEMUMS

and other florist's flowers are cultivated at the Plumpton establishment, some distance from Cooksbridge. The Plumpton Nursery consists of some 12 acres, partially covered with glass-houses, in which the old double white *Primula*, *Pelargonium Volonte Nationale*, *Richardias*, *Vallotas*, *Lilies*, and other market flowers and Ferns are grown. Many of the houses are cropped with Tomatos, which, on being cleared, will make room for the immense stock of *Chrysanthemums*, and for Fielder's white *Azaleas* and other flowers for winter supplies. One large house has given a splendid crop of *Lilium longiflorum Harrisii*, and was filled with pure white *Lilium lancifolium album* and *L. Kratzeri*.

This nursery was formerly a brick-field, and in a large square area of it where clay was dug out, Mr. McBean stands his thousands of large-flowered *Chrysanthemums*. These plants are full of great promise, their leaves reaching almost down to the rims of the pots. A clever contrivance for ensuring the watering of this large number of plants economically has been provided by placing tubs at intervals of 12 feet to 15 feet all round the square, and lengths of piping carry the water from tub to tub.

In the open ground thousands of the varieties of *Madame Desgranges Chrysanthemum* were in full flower, and there were large numbers of the early-flowering kinds in pots; also large beds of Sweet Peas, Asters, *Doronicums*, *Eryngiums*, and other flowers.

FORESTRY.

(Continued from p. 177.)

OUR WOODS AND FORESTS.

THE enclosed plantations of the New Forest cover about 11,000 acres of ground, the major part of which is under seventy-five years of age. These trees consist of Oak, Beech, and other hardwoods, and also a large extent of Scots Fir, which thrives on the poorer soils unsuited to Oak. Although these plantations can be protected from cattle, they cannot be cleared of timber in the usual manner adopted when the latter becomes ripe; but a certain proportion must be left to rot or blow down, in order to satisfy the incomprehensible provisions of an incomprehensible law. Indeed, the most recent legislation on the subject appears to have been drafted without the slightest recognition of the fact that the forest proper is a natural growth, and as such is subject to natural decay, and accidents peculiar to living organisms. It provides only for the immediate interests of the present generation, and entails a needless waste of ground without any compensating advantages.

In the Forest of Dean, the conditions under which the Crown exercises its rights are somewhat better: one-half of the whole area may be enclosed, and the right to enclose is not confined to any particular part of the forest, but is applicable to the entire area. From a picturesque point of view, this forest is quite equal, if not superior, to the New Forest, although the numerous collieries and other works scattered about it dispel much of that sense of removal from everyday life which a large forest invariably inspires. As a timber-growing area, however, it is probably the best of all the Crown forests, and in past times was regarded as the chief source of Oak timber for the Navy. Mining and grazing rights place certain restrictions upon the growth of timber; but as the latter only exist on the unenclosed land, a large area is available for the raising of plantations. At the present time, however, only 5000 out of the permitted 11,000 acres are enclosed, although steps are being taken to increase the area until the whole of the ground allowed for the purpose is taken in.

Windsor Forest, apart from the great park and the plantations around Cumberland Lodge and Virginia Water, may be best described as a gravelly heath, with a considerable number of Scots Firs scattered over the surface. Its proximity to a royal residence invests it with a more game-preserving character than is the case with the other two forests, but still a large area is available for timber-growing purposes.

In addition to these three forest areas, the Crown also possesses smaller woodlands, such as the High Meadow Woods, adjoining the Forest of Dean; Alice Holt Woods, Bere Woods, &c., near the New Forest, and others, comprising a total area of over 50,000 acres, after deducting waste ground in the New Forest and elsewhere, which is not adapted for afforestation.

The above is a rough and imperfect sketch of our Crown woodlands, which represent in this country those vast areas of forest-covered land which the State owns in most European countries. Small as they are compared with the latter, they cannot be despised in a thickly-populated country, in which individual ownership is developed to its fullest extent. It might reasonably be expected that the example of most civilised States would be followed, and by increasing the area of these woods by the acquisition of poor tracts of semi-waste land, a system of State forestry would be gradually built up, which has been so successfully accomplished abroad. But judging from past experience, and present appearances, this does not seem to be the intention of the authorities. Either their experience of State forestry as a commercial undertaking has not been satisfactory, or they feel that public money would be wasted by expending it in a manner which our Continental neighbours have clearly demonstrated is for the public good, in both an æsthetic and economic sense. So far as past experience goes, we do not possess figures to show the exact financial results of the Crown forests over a long series of years, but we know that early in

the present century timber of considerable value was removed from the Forest of Dean; and also from the New Forest since the year 1850.

Of recent years, little more than a sufficient sum for their maintenance has been obtained, but, as they contain no proper succession of mature timber, the majority of the plantations being comparatively young, this is not to be wondered at. But it is not very probable that the return from them in the past has been on the whole satisfactory from a strictly financial point of view. When timber crops are exposed to the browsing of cattle and horses, the growth of the trees usually leaves much to be desired; while the supervision of a large area of unproductive ground, the erection and maintenance of gates and fences, and the amount of surveillance necessary for ground frequented by all classes of the public, raises the cost of management far above what it should be on freehold property. But apart from all this, timber crops can never be very profitable unless managed in a judicious and skilful manner, and it is an open question (if not a dead certainty to the contrary), if the Crown forests have ever been managed upon sylvicultural principles.

Those who have visited either the New Forest or the Forest of Dean cannot have failed to notice large areas of ground covered with low-crowned, short-stemmed Oaks, standing in straight rows, reminding one more of a thickly-planted Apple-orchard than a forest of indigenous timber-trees. The explanation given of this unpicturesque, and certainly unprofitable method of growing Oak, is that it originated in the days when the Crown forest supplied Oak for the Navy, and that crooked timber was of more value in those days than clean, tall stems such as are now in demand. But it hardly seems possible that the peculiarities of naval requirements can be responsible for the management of those plantations formed during the last fifty years, or since iron took the place of wood in shipbuilding; yet the younger plantations in our Crown forests do not exhibit such a marked improvement sylviculturally over those of an older date, as one would expect to find in woods presumably managed for the production of marketable timber. Their present appearance would almost lead one to imagine that the system of management adopted was based a good deal more upon rule-of-thumb and ignorance of sylvicultural principles than with a definite view to the production of good timber. Some years ago an eminent French sylviculturist eulogised the system of growing Oak in the Forest of Dean, and many members of the Royal Scottish Arboricultural Society looked forward to learning a few "wrinkles" on this interesting subject. But with the exception of one or two enclosures (which probably did duty in the eulogy referred to for the whole forest), little was seen to inspire much enthusiasm either as regards past or present management. As in the case of most British plantations, over-thinning seemed to have been the weak point, aggravated by the mixing of species in a manner which rendered good results difficult to obtain. Enclosures were thrown open too soon in many cases, and before the trees were old enough to dispense with the humus layer which close order had provided them. Before the trees had reached anything like timber size, they were deprived of their richest feeding-ground, and the surface became hard and grass-covered, giving the growth of the timber a check it never recovered from. This class of timber forms a striking contrast to the grand old trees which still exist in places as the remnants of former crops, proving that suitable sylvicultural conditions are all that are needed to get similar results in the future. *A. C. Forbes.*

(To be continued.)

BOOK NOTICE.

RECENT CHRYSANTHEMUM LITERATURE.

UNDER the above heading, I gave in the *Gardeners' Chronicle* of March 6 last year a brief résumé of such publications on the *Chrysanthemum*, both English and foreign, as had been published during the

previous twelve months, or thereabouts. Since then the attention of horticultural writers does not seem to have been devoted to the same extent to this subject; but, nevertheless, some useful additions to this branch of literary work have been made, and a few notes bringing the subject close up to date will be acceptable to those readers specially interested in the flower from a literary standpoint.

It will be remembered that the line was drawn at trade catalogues, many of which contain much useful matter, but which form an independent section of their own. The first country to claim our attention on the present occasion is America, and although there has been nothing to compete with some of the older works, mention should be made of the energy and regularity with which the Cornell University issues its set of bulletins devoted to horticultural subjects, and of these No. 136 by Messrs. L. H. Bailey and Wilhelm Miller is entitled *Chrysanthemums of 1896*. This is uniform with previous issues, and deals with novelties under trial at the University Experiment Station at Ithaca. There are seven photographic reproductions of various types of novelties, and the bulletin concludes with a classification of good varieties arranged in regard to their colours; promising varieties, unpopular varieties, less promising varieties, and a significant short list headed "not true to name."

From Belgium we have only one addition to notice, viz., M. O. de Meulenaere's third supplement to his general catalogue, which ranks as a standard work of reference, giving as it does names, dates, raisers, classification, &c. The Nederlandsche Chrysanthemum Club of Amsterdam is probably the only Society in Holland that pays exclusive attention to the golden flower, and its first show was held in November last, on which occasion the executive issued for the use of visitors at a small charge, a neatly-printed brochure of fifty-six pages, containing amongst other things a history of the Chrysanthemum, by Mr. J. K. Budde, of Utrecht, a Cultural Guide, the Rules of the Club, and a List of prize-winners at the show.

English contributions are not numerous, there being, so far as it is possible to learn, only two, and these but small treatises. One is entitled *Modern Chrysanthemum Culture for the Million*, by George Garner; the other, *The Show Chrysanthemum and its Cultivation*, by C. Scott.

The French have issued five, of which two are new editions of works previously noticed. The other three comprise a pamphlet, reprinted from a local horticultural society's journal, entitled *Culture du Chrysanthème*, par M. Ernest Baltet; a second, called *Le Chrysanthème, son Histoire sa Culture*, by M. Cabos of Havre; and the third, a reprint of various papers read at the Orleans Conference of the French National Chrysanthemum Society last November, entitled *Maladies et Parasites du Chrysanthème, de la Fécondation dans le Chrysanthème*, and *Des Meilleurs engrais et Composts*, the whole forming a neatly-printed brochure, issued under the auspices of the Society, but published by M. Doin of Paris.

The various organs of the three French Chrysanthemum societies continue to be published at intervals. Thus the *Nord Horticole* regularly appears every month, and is supplied gratis to the members of the northern French Chrysanthemum Society, whose head-quarters are at Lille, and whose show and Conference there next November promises to be an event of some importance. Then we have *Le Chrysanthème*, the official organ of the French Chrysanthemum Society, which is located at Lyon, and this publication has just run into its seventeenth number. The Paris Chrysanthemum Committee's *Journal* has been published at somewhat longer intervals, the last issue being Part 6, and containing several illustrations of the Paris show in November, 1897, and several articles relating to the flower in various ways.

The most recent periodical publication is *Il Crisanthemo*, the quarterly journal of the newly-formed Italian National Chrysanthemum Society, No. 2 of which has just been distributed amongst the members. This number consists of twenty-four pages, and contains a good deal of matter on various subjects.

Apart from purely society information, there are articles on the history of the flower, the origin and spread of it in Europe, classification, a cultural calendar, a list of forthcoming shows, &c. Verily the English Chrysanthemum fancier who desires to keep in close touch with what is now being done in regard to his favourite flower, will have to be endowed with the polyglot attainments of an Elihu Burritt or Cardinal Mezzofanti.

And we have not exhausted the list, for it is intended to issue yet another journal by one of the continental Chrysanthemum societies, viz., the Swiss N. C. S., the first number of which will appear directly after the ensuing season.

Looking at these foreign periodicals that are published in countries where the Chrysanthemum is almost a newly-discovered exhibition flower, I can only repeat what I said in my former paper, that one would have thought that we in England, with all our professions of affection for the flower, would have long since started and loyally supported a weekly or monthly magazine specially devoted to the dissemination of Chrysanthemum news. C. Harman Payne.

TEWIN WATER.

THE seat of H. Trower, Esq., is situated about a mile from Welwyn Station, and contains many features of a very interesting character. The country round is diversified and undulating, broad meadows interspersed with stretches of woodland and cover, in which trees of fine dimension, full of health and vigour, are flourishing; avenues of Spanish Chestnuts of large size, Beech also, and lines of Walnuts, may be seen as one rambles through the glades of the fine preserves. Here, too, were Oaks of immense size; one of them having a trunk perfectly hollow, into which one could easily crawl, and passing upward make an exit, dignified or otherwise, some 8 or 10 feet higher up. A singular excrescence had formed on one of the trees, and had so swollen that, on looking at it from one side, the exact form of an immense crouching toad could easily be imagined.

These woods are of considerable extent, and in their season are a fine cover for game, of which much is reared on this and adjoining estates. The pleasure grounds are extensive, and in excellent condition, the lawns formed of a dense turf springing to the tread; grand specimen trees stand at intervals, perfect in form, and vigorous in growth. The beauty of this part, as also the whole area of the estate, is enhanced by a clear stream of water running through it, in which are found some fine fish. On the bank of the stream in the pleasure-grounds a fine lot of strong-growing Spiræas, Bamboos, and other water-side plants have recently been planted, which, when established, will add interest and beauty to this portion of the grounds. At a part where the garden adjoins a meadow, and where the stream is widest, a bog garden and an island are going to be made and planted during the autumn.

The flower-garden of large size adjoins the mansion. The flower-beds are filled with bedding plants, and some with herbaceous perennials, and with Cannas, Fuchsias, and Dracænas. A capital piece of work has just been completed in furnishing the grounds and gardens with water from the river Nimran, the stream alluded to above, by means of an hydraulic ram.

In a basin surrounding a fountain I noticed some of the new Nymphæas that were planted out in pots in the summer, which are growing freely. I remarked *N. Caroliniana nivea*, *N. odorata sulphurea*, *N. alba rosea*, *N. Marliacea carnea*, *N. Laydekeri*, and *N. Signor Eti*. These useful additions to our existing species and varieties are likely to do well.

Passing from the lawn by a winding path, a fine clump of Pæonies and Carnations was remarked, and a little further a border of herbaceous perennials came in sight. This is more than 100 yards in length, and the beds on each side are planted with Pæonies, Delphinium, Campanulas, early Gladiolus, Stocks, *Lychnis viscaria flore-pleno*, with numerous other useful species, and edged with the useful white

Pink Her Majesty, a Box edging, and a smooth gravel path.

In the kitchen-garden good crops of vegetables were noted; healthy pyramidal fruit-trees, and on the walls, trees of the Peach, Nectarine, Plum and Cherry, were showing well for fruit. A north border was wholly filled with Violet runners, for lifting in the autumn. A neat residence for the gardener has been erected; and near by is the cottage for the electrician—the mansion and adjoining buildings, stables, &c., being lighted by electricity.

The engine-house, dynamos, and accumulators are located in a block of buildings at a short distance from the mansion, and being covered with Ivy, and hidden by trees, are in no way an eyesore or detrimental to the pleasure and comfort of the proprietor. A number of plant and fruit-houses have been erected, and the young trees and plants are making good progress. There were good crops of Cucumbers and Melons to be seen, and among the latter were Blenheim Orange, Eastnor Castle, and High Cross Hybrid, the latter a white-fleshed Melon. In another division were Caladiums, Achimenes, Gloxinias, &c. Some Orchids, also, have already made their appearance, some plants of *Cattleya Mossiae* being in flower. Carnations were found in flower in another division, including *Souvenir de la Malmaison* in variety, and the useful *Germania*. Cannas, Lilliums, Hydrangeas, Fuchsias, *Streptocarpus*, Begonias, &c., filled the show-house. Peach-houses and vineries had been but recently planted; of these little further need be said than that the trees were growing away freely, and the spaces at present unoccupied by trees were planted with Tomatoes.

Mr. Thomson took charge of the gardens last March. W. Swan.

FOREIGN CORRESPONDENCE.

PROTECTION AND SHELTER.

A SURGEON of eminence in his day was the author of a book inculcating the necessity for rest in the treatment of disease. It seemed like a truism, but experience shows that the lesson cannot be too strongly enforced, and so in the planting of trees, shelter is often all important. We have recently seen some striking illustrations of the value of protection and of the injuries which are inflicted when such protection is not and cannot be afforded. Our first illustration is taken from the garden of a hotel on the shores of the Lake of Geneva, at Ouchy. There, sheltered from cold and wind by the surrounding hills, exposed on the southern aspect, and to occasional fogs, is a collection of trees perfect in symmetry, and some of them attaining proportions which we are not accustomed to see in our own country. As usual, some of the trees are already spoiled, and many more will be so from overcrowding and want of thinning. Nevertheless, many of them are fine specimens of their kind, and they illustrate very strikingly the characteristics of particular species.

The Sequoias (Wellingtonias) are faultless specimens, averaging 19 metres in height, exceeding the height of the hotel itself. Singularly enough, not one of them has produced a cone. A very noble Deodar, whose dimensions we do not know, occupies the centre of the ground. Its weeping plumose branch-system, convex on the upper surface, and the ultimate shoots curving downward, is very characteristic, even in a tree of this size. There is a curious variety of this species to be seen here, which has elongated, serpentine branches trailing along the ground after the fashion of those of the Serpent Fir, or of some of the Weeping Beeches.

Cedrus atlantica is represented by several fine specimens, glaucous in hue, often with stout, ascending, primary branches, while the smaller ones are horizontal, the ramifications flat, not convex, and the ultimate branchlets long, thinly beset with needles, and widely spreading, or if erect, tapering into long whip-like shoots.

Of *Cedrus Libani*, there are also some majestic specimens, with ascending main branches, and others spreading horizontally, more densely covered with

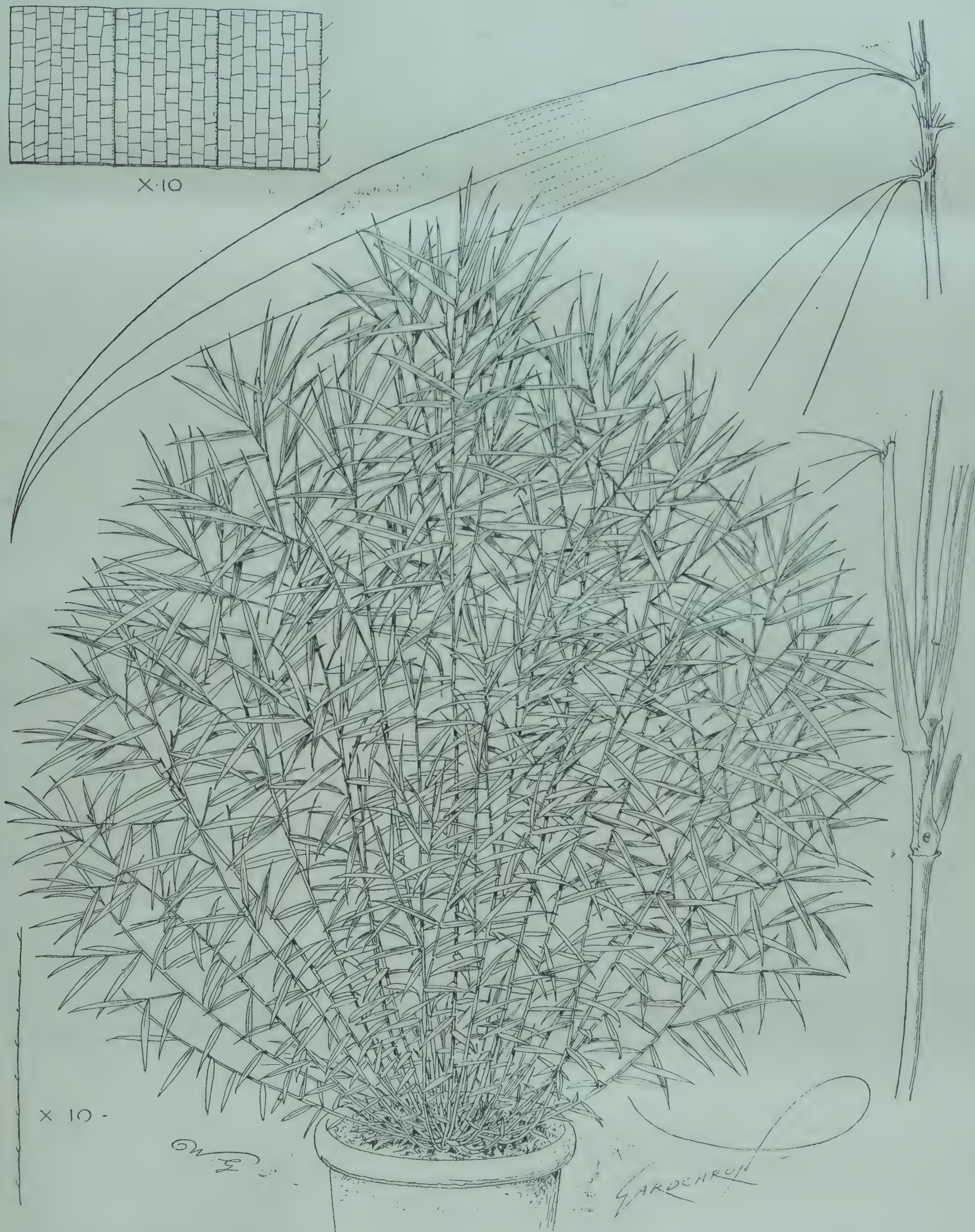


FIG. 57.—*ARUNDINARIA ARISTATA*, TOGETHER WITH DETAIL OF THE BACK OF LEAF TO SHOW NETTING; EDGE OF LEAF ENLARGED TO FOLD, AND A FULL-SIZED LEAF AND SHOOT (SEE P. 212.)

foliage, and more compact and less extended than in the corresponding shoots of *C. atlantica*.

Of course, every one who knows anything about Cedars, knows how exceedingly variable they are in habit. Nevertheless, when several large specimen trees of the various species are grown together, as here, the differences now pointed out are clearly observable.

There are some fine specimens of the Maidenhair tree (*Ginkgo*), of which sex we do not know, but they afford an illustration for the necessity of thinning in due time. The problems now are whether it is better to leave things as they are to the detriment of both trees, or to sacrifice either the *Sequoia* or the *Ginkgo*. Fortunately the question does not depend upon us for its solution.

Among other fine trees are *Pinus Lambertiana*, *P. monticola*, *P. Pinaster*, *Abies Pinsapo*, *Picea Morinda*, and *Cypresses*, reminding one of Italy. Fortune's Weeping Cypress is very beautiful, but it is allowed to be sadly over-grown; *Juniperus pendula* and *J. excelsa*, *Taxodium distichum*, and many others which it is not necessary to name; specifically our present object being to illustrate the value of shelter in the production of noble specimens, and the short-sightedness of owners in allowing these fine trees to become spoiled for want of timely thinning. On another occasion we may give illustrations by way of contrast of the terrible effects of a want of shelter.

SHRUBS WHICH SUCCEED BENEATH TREES.

FREQUENT inquiries are made for a list of flowering shrubs that will thrive beneath old trees. The chief difficulty is in the matter of feeding material in the soil, and not so much a question of shade, which is not expected to be really dense. Near the surface of the ground beneath old trees, there is a great network of roots, which must extract a very large amount of moisture and food. These roots, being more numerous and stronger, do not permit a newly-planted shrub to get much of the necessities of life, and the new-comer is slowly starved to death.

There are a number of plants that delight in shade, and if the soil be kept in condition, there should be no difficulty in growing them in such locations. The main attention should be in heavily mulching the ground above the roots with well-rotted manure, which will furnish both food and moisture. The following selection would prove very desirable and well adapted for such locations:—*Ceanothus americanus*, *Azaleas*, *Rhododendrons*, *Pyrus japonica*, *Clethra alnifolia*, *Cornus mas*, *Itea virginica*, *Ligustrum vulgare*, *Pavia parviflora*, *Berberis Thunbergi*, *Spiræa Bumalda*, *Laurus Benzoin*, *Hamamelis virginica*, *Mahonias*, *Kalmias*, *Hypericums*, *Diervilla trifida*. Many additions could be well made to this list. *Meehans' Monthly for September*.

VARIORUM.

JAPANESE IN AN ORCHID CRAZE.—The latest craze that has made its appearance in Japan is the Orchid craze; and if reports are true, the Tulip craze in Holland of several centuries ago may well look to its laurels. According to the *Tokio Asahi* (Morning Day), a new variety of a small Orchid, jointly owned by the well-known gardener of Shitaya, Maru Shin, and by two others, is at present enjoying the highest reputation. It is called "Amakusa," for every rare variety has its own special name. Its leaves measure only 4 inches in length and 1½ inch in width, this variety being the only one now found in Japan. The leaves, only eleven in number, are whitish, with yellow-hued stripes widely marked, and the whole appearance exceedingly graceful. The fame of the "Amakusa" has sent all the circles of Orchid-hunters into a flutter. Numerous applications have been received by the triple owners asking them to part with even one leaf, for Orchids, as is well known, can be propagated by roof separation. But all these applications have been courteously declined. The other day, says the *Asahi*, a delegation representing ten villagers of Chitagori, Okari, came up to Tokio. They were all men stricken with

the Orchid mania, and hearing of this rare variety, each of them subscribed 500 yen (a yen is 50 cents in United States currency), and one of them, the head man of the village, arrived on the important mission of purchasing a leaf. While the negotiations were in progress, the Kyoto Horticultural Company despatched its president also on the same errand. The owners of the precious Orchid conferred with each other, but decided not to accede to the offers made them, for they have in mind a similar case of another rare variety which several years ago brought the fabulous price of 10,000 yen per leaf. So both delegations were obliged to return home crest-fallen; and the *Asahi* adds, "Even supposing that the owners might be persuaded to part with that Orchid at 5000 yen a leaf, that would bring them a sum of 55,000 yen, while if the price were to rise to 10,000 yen each, that amount would be doubled." *Western Morning News*.

A LAND WITHOUT A NURSERY.—Nurserymen who complain of the results of competition may be surprised to learn that in a certain part of the United States territory there is not a single nursery. The *Rural New Yorker* publishes a letter from C. E. Haskins, of Oregon, to Professor H. E. Van Deman, in which the writer detailing his experiences in the Hawaiian Islands, says:—

"A German horticulturist took to me, and we went all over the islands together. I formed the acquaintance of all the officials in the agricultural and pomological departments, and saw all of their many kinds of fruits, Nuts, plants, &c. I found them all very interesting, but must say that I was surprised to find that there was no such thing as a nursery such as we have, in all the Hawaiian Islands. No fruits are grafted or budded, as we do in the United States. They simply plant the seeds and trust to luck, just as our grandfathers did with the old seedling Apple orchards. I did some budding of Oranges, and grafted some Mango-trees, and found it as easily performed and as sure as at home, if everything was properly handled, and at the right time.

"Fruits vary from seed here as elsewhere, and I found some of the finest individual varieties among the Mango-trees as well as among other fruits. But after learning all I could, I do not think it would pay to grow anything in the fruit line, and ship it over 2,000 miles to market; but for home use, it would pay to grow better fruits.

"All kinds of fruits can be had twelve months in the year—Papaya, Pine-apple, Banana, Custard Apple, Mango, Orange, Lemon, Fig, Palms, Strawberry, Water Lemon, and many other fruits, and in numberless varieties." *The National Nurseryman*, September, 1898.

THE WEEK'S WORK.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Gathering Fruit of the Apple and Pear.—Such varieties as ripen during late autumn and winter must be gathered when the pips begin to change to a brown colour, and the fruit-stalk will part easily from the wood on being raised by the hand. The season being a backward one generally, the gardener need be in no hurry to gather the fruit, but wait till the changes adverted to have taken place, and even then he should take only those fruits from a tree that are quite fit, leaving the others for gathering at later dates. A gathering-basket should be long, flat, and not hold more than a few dozen fruits. It should be lined with coarse sacking, so as to prevent bruising; and no fruits should be squeezed, bruised, or allowed to roll over each other, but every one handled as carefully as if it were an egg. In Kent, when gathering from a ladder, a bag is used, fastened at the man's side by means of a strap round the waist. It is a convenient method, but by it the fruit is much bruised; and I consider that baskets or trugs furnished with a cross-handle for hooking on to the rungs of the ladder are much to be preferred to bags. For tall bushes a double ladder is best. These are made wide at the bottom in order that they may stand firmly, and are bolted together at the top; but for the tops of tall standard trees, single ladders are indispensable, which, if placed nearly upright, do not injure the fruit and spurs much. When placed in the fruit-room the fruit should not be put more than two layers deep if required to be kept for any length of time; and more than this, prevents the ready detection and removal of decaying fruits. To ensure good

keeping, as far as possible doubtful fruits should not be stored with the best fruits, but kept apart for immediate use, or given to the pigs if unfit for anything else. The fruit-room should be well ventilated till sweating is over, and on no account should straw or hay be used under the fruit, as it breeds mildew and imparts a disagreeable flavour; and if anything be necessary over the boards, clean newspapers may be used. In very cold fruit-rooms, two or three thicknesses of paper should always be placed over the fruit. The length of time during which Williams' Bon Chrétien, Marie Louise, and other autumnal varieties of the Pear are fit for use, may be very much extended by gathering the ripest fruits first, and placing these in a warm dry room, and continuing to gather the fruits weekly. The atmosphere of the fruit-room must always be sweet, and free from objectionable odours, as ripening fruit absorbs these quickly.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Violets.—The demand for these fragrant flowers during the autumn, winter and spring, is now so general, that all necessary preparations should be made to ensure a constant and sufficient supply. The young plants in the open, I presume, are now in proper condition to be removed to pits and frames, where they may be expected to give a supply of flowers during mid-winter, provided that the pit may be heated when necessary. Ordinary cold-pits or frames will be sufficient for the accommodation of plants to bloom in autumn and spring. Prepare the pits and frames a few days previous to moving the plants, that there may be sufficient time to thoroughly moisten the soil, and to allow the beds somewhat to settle down. Wash thoroughly the wood-work and glass, to remove any insect-pests there may be, and to admit all the sunlight possible. Make up the beds of well-rotted manure, so that when the addition of 6 to 8 inches of soil—according to the variety and size of the plants—has been made, the surface will be a few inches only from the glass. It is not advisable to use light or fresh manure for making the beds, or the sinkage will be considerable, and the plants will fall a considerable distance from the glass at a time when it is essential they should be near the light. The manure should be well trodden before covering it with the soil. Previous to lifting the plants, take care that the soil is in a moist condition, and select plants with good plump single crowns, cutting off all runners. Do not allow the roots to become dry after lifting, but re-plant without delay. When this has been done, give them a good soaking with water; and if the weather be mild, keep the lights off as much as possible. During dry weather syringe the plants twice each day.

Caladiums.—In the same degree as the foliage dies off, so should the supply of water be decreased, and when the plants are resting, the pots may be placed away in a moderately warm house. Do not allow the soil to become dust-dry at any time, or the tubers are apt to shrivel and die. *C. argyrites* and similar varieties are most likely to suffer from this cause.

Dracenas.—Plants that have been repeatedly used for decorative purposes, and have lost their bottom leaves, may be topped. These tops if placed in bottles filled with soft water containing a few lumps of charcoal, to keep the water sweet, and kept in a close, moist temperature and shaded, will quickly emit roots. Should the tops be large and heavy, possessing a considerable amount of foliage, the stems may be notched, then wrapped with moss, which should be kept wet. By such a method roots will soon be induced. The stems, if kept moderately dry during the winter, will produce young growths that may be made cuttings early next year.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

Late and Early Cabbages.—Let the quarters be cleared of the remains of the Cabbage crop, and of all weeds, raking off the latter and burning them. Ply the hoe frequently between the rows of the late Cabbages and of those plants which are beginning to form hearts, in order to aerate the soil and destroy weeds, the best-kept land being difficult to keep free from weeds at this season. The plants in the seed-beds of Cabbage must be kept free from weeds by hand-weeding the beds, and a copious watering afforded afterwards. If the plants are crowded in any degree, let them be thinned by drawing out the weaker

plants, planting these on good soil in a warm position, affording them water for a few days with a water-pot having a rose on the spout. They will make strong, sturdy plants, fit to set out towards the end of the present month. A good position for a bed of spring Cabbage is the quarter occupied by the Onion crop now removed, merely forking the ground and planting them in rows 18 inches apart, and one foot between the plants. If any plants of Ellam's Early Cabbage are strong enough to plant out, set them out forthwith. Make the ground very firm about the roots of all Brassicas, affording water whenever it is needed.

Lettuce.—Seeds may be sown thinly in beds or lines for standing the winter without transplantation, the sorts to sow being Brown and Bath Cos, and Hammer-smith Hardy Green or All-the-Year-Round Cabbage. The beds should be warm and dry, no manure being applied unless the soil be [poor, and then only such as is decayed; but it should be deeply dug. Lettuces raised from seed sown last month should have the ground hoed, and all the weeds removed from among them, water being applied freely, or the plants will make small progress. A piece of land should be got in readiness on a warm border, and handlights cleaned and mended to put over them when transplanted. I like to transplant Lettuces early in order that they may get a firm root-hold before winter sets in. Afford encouragement to Lettuce plants which are intended for transplanting into brick pits, cold frames, and cool fruit-houses, for affording early winter supplies.

Endive.—Continue to transplant successional sowings of Endive as directed in my last month's calendars, also putting some of the plants into any spare frame, pit, or cool orchard-house.

Small Salading.—It will be found necessary to sow seeds of Radishes, Mustard and Cress, on a dry, warm border, particularly now that the days and nights are getting cooler; making a sowing once a week outside; and towards the end of this month make sowings in pits, frames, or boxes.

Herbs and Seeds.—All sorts of sweet, pot, and medicinal herbs should now be gathered when dry, and dried as rapidly in the shade as the state of their growths will permit. Any seeds which it may be thought desirable to save for future use, should be collected, and dried in readiness for storing.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

The East Indian-House.—Such species as *Aërides*, *Saccolabiums*, *Angræcums*, and the warm growing *Vandas* having made considerable growth, they may be encouraged to grow so long as this [warm weather continues, for these species not forming pseudo-bulbs, the plants do not require nearly so long a rest as those which have pseudo-bulbs. They should be treated in a great measure as resting plants, more especially in the matter of water at the root. At the present time the roots should be kept uniformly moist, allowing them, however, to become properly dry immediately the green tips of the roots commence to change colour, and fire-heat to any great extent is needed to keep up the temperature, the moss must be permitted to become quite dry before affording water, and even then it must be afforded in moderation. Amongst the heat-loving *Vandas*, *V. Sanderiana* is now pushing up its flower-spikes, and those who possess plants of it should afford them encouragement as regards heat, moisture, and light, but carefully protect the plant from direct sunshine; *V. Sanderiana* has generally been considered a difficult plant to establish, or to keep growing vigorously for any length of time. I have tried several expedients, and up to the present time the most successful has been to fasten the plant in an upright position upon a Teak-raft, the rods of which are about an inch apart, using no compost; the roots twine round the rods in great luxuriance. The place in which it stands is the hottest corner of the house, and near to the roof, where there is plenty of light but no direct sunshine. The stems and roots are moistened twice or thrice daily during bright weather, but on dull days only once. In affording water, care must be taken not to wet the foliage, or water will accumulate in the axils of the leaves, and probably set up decay. Scale insects are liable to infest it, quickly disfiguring the foliage, and these should be frequently sought for and destroyed. *V. teres*, *V. Hookeriana*, and *V. x Miss Joaquim* likewise thrive when placed upon Teak-rafts, and these at this season should be exposed to full sunshine, syringing them overhead

several times a day. The same kind of treatment is advised for *Schomburgkia tibicinis*, *S. undulata*, *S. Sanderiana*, *S. rosea*, *S. Kimballiana*, &c. The whole of the *Cypripediums* which occupy a shady position in this house are now growing freely, and will require abundance of water at the root. Dryness at the root, especially to pot-bound plants, or in the atmosphere surrounding them, is sure to cause weak growth, and such is a prey to insect pests.

Small *Cypripedium* Seedlings.—It should now be ascertained which of these must be repotted, as the present is a suitable season for performing this operation. Seedlings usually grow fast, requiring to be repotted twice in the year. These delicate little plants require much attention in regard to water, for should a check be caused by giving them too much or too little, progress is checked for a long time.

Miscellaneous.—*Paphinia cristata* suspended from the roof is now flowering in the Cattleya-house, and till growth is completed copious applications of water will be given it, and then the compost will be merely kept moist. Plants of *Lælia purpurata*, whose growths are about 3 inches high, will soon begin to emit roots, and if any plant requires more room, now is the time to repot. When affording these plants larger pots, it is wise to allow for two seasons' growth. Old plants that require to be broken up may also be taken in hand. *Lælia elegans* and its varieties have always been considered first-class Orchids, and at the present time plants that are strong will be flowering from the apex of the current season's growth. At this time the new growths are tender and easily decay, either by affording more water at the root than the plant needs, or from a cold, damp air. When such mishaps occur, the decayed parts should be removed with the knife, and the plant placed in a drier and warmer house. *L. elegans* may be repotted soon after the flowering season, as the new roots that are emitted from the base of the flowering growth at once enter the new compost and re-establishment is rapid. Fibrous peat, a little sphagnum-moss, and plenty of crocks and charcoal, well mixed together, form a suitable compost for this species, as well as for *L. purpurata*. It is important when repotting the plants to do this firmly, and to use a few neat stakes, and tie the strongest pseudo-bulbs to them. Water should be afforded sufficient to prevent the excessive shrivelling of the pseudo-bulbs. Strong, well-rooted specimens may be allowed to carry their flowers till the latter fade, but from weakly plants the flowers should be removed as soon as these expand. Newly-imported plants of *Lælia purpurata* and *L. (Brassavola) Digbyana* may be potted up on arrival, and placed in the Cattleya-house.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of Salisbury, Hatfield House, Herts.

The Peach-house.—Trees from which the fruits have been gathered should now be looked carefully over, with a view to removing as much of the wood made last year, as will not be required to be laid in. No more need be retained than is necessary to cover the space without crowding. When the superfluous shoots have been removed, those which are retained will obtain greater benefit from increased light and air, which, by more fully maturing the wood, will render the crop next season a more sure one. To the same end ventilate the house freely, and examine the soil in the borders as often as necessary, and afford copious supplies of water whenever such is required. Syringe the foliage over in the afternoon of each bright day, and endeavour to keep it healthy and green as long as possible. Peach-trees in pots that were not repotted last autumn, will need to be done this year, and such work should not be long delayed, or the roots will be unable to take any hold of the new soil before the end of the season. The pots to be used for such a purpose must be sound and clean. The sizes needed will depend upon the sizes of the pots from which the trees are to be removed. As a rule, space should be provided for about 1½ inch of new soil between the ball of the plant and the sides of the pot. The soil should be chopped, or pulled to pieces by the hand, and in character the same as recommended in a previous Calendar for making borders for Peach trees. Before the trees are removed from the pots they at present occupy, ascertain if the soil about the roots be very dry, and if this be the case water the plants. Pot-bound trees sometimes are difficult to get out of the pots without breaking the pots. The ordinary way of doing this, however, is the best. Turn the plant as nearly

upside down as the top of the tree will permit, and give the top of the pot a gentle rap on the bench, at the same time pulling the stem of the tree. Remove the crocks, and prick out as much soil from between the roots as may be done without damaging them. Allow about 2 inches of drainage material at the bottom of each pot, using strong ones at the bottom, with smaller ones over them. Cover the crocks with a layer of the roughest of the soil, making it firm with the potting-stick. On this the trees may be placed at such height that the roots will be covered with soil, and a space be left of 2 inches on the surface for holding water. Put the necessary soil around the ball of the plant in small quantities, and pot firmly throughout. A cool orchard-house is the best place for them for a little time after repotting, but the front ventilators may be closed during bright sunshine, and when the outside air is very dry. A thorough root watering is necessary as soon as the plants have been returned to their positions. They may be syringed twice on each bright day.

Cherry and Plum-trees that require to be repotted may be treated in the same manner. Orders for fruit trees required to be delivered early in November should be placed in the hands of the nurseryman without delay.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord Gerard, Eastwell Park, Ashford.

Tuberous-rooted *Anemones*, though amongst the oldest of garden plants, are not now cultivated so extensively as they might be. By planting at successive periods, commencing in September, *Anemones* may be had in flower during the greater part of the year. If the first batch be planted during the present month, it should be followed by another one in October, during which month the main batch should be planted for blooming in the spring. It is useless to plant during November, December, January, and February, as the roots would be more likely to decay; but in March and April further batches may be planted, to bloom during summer and autumn. The varieties are exceedingly numerous, and all of them are very beautiful, the colour of their flowers being brilliant and most variable. The plants delight in a rich loam, in which well-rotted manure has been well intermixed; and if the soil be at all retentive, a mixture of sharp sea-sand is advisable.

Irises may be had in bloom from March to August. Early autumn is the best time to plant them, and though they appear to flourish in any soil, a damp situation suits them better than a dry one. There are numerous groups of *Irises*. The Palestine *Irises* are beautiful; the Spanish *Iris* (known as the Garden *Orchid*), the Bearded or German *Iris*, the Siberian *Iris*, the English *Iris*, and a variety recently introduced by Messrs. Carter as the Oxford and Cambridge *Iris*, from the colours of the flowers being pale and dark shades of blue. *Irises* should be planted in groups, as they are then most effective. Many of the varieties are sweetly scented, and all are useful for furnishing flowers for cutting.

Eulalia japonica zebrina is a graceful and ornamental plant, especially valuable for planting on the banks of ornamental lakes, or by the side of a running stream. It is perfectly hardy, and in situations where Bamboos will not thrive this plant is almost equally effective. It grows 4 to 6 feet high, and the leaves, which are a dark green, are prettily marked with a yellow bar. As a dot plant on lawns, or in clumps, it is as effective as the Pampas Grass.

Carnations.—The earliest layers should now be removed from the old plant, and planted in the beds or borders where they are intended to flower. These borders should have been previously deeply dug, and enriched by good rotten manure. If the soil be heavy, some sand or road-grit would be helpful if well mixed with the staple soil. When planting make the soil firm around the roots of the plants, and if the soil remains dry, afford a good watering after planting. Should hot weather continue, an occasional sprinkling overhead with water from a fine rose-can towards the wane of the afternoon will greatly benefit the plants, and stimulate growth. Carnations require a sunny position. Take every care in removing the layers not to injure the roots, and do not allow the layers to remain on the old plant too long, or they will make roots and growths that will sustain a severe check when they are ultimately severed from the old plant. Never coddle the Carnation, as the plant is essentially hardy, and except in places where dampness or fog abounds, will stand the severest winters.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPT. 20 { Royal Horticultural Society's Committees.

SALES.

MONDAY, SEPT. 19 { Dutch Bulbs, at Protheroe & Morris' Rooms.

TUESDAY, SEPT. 20 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Sale of the Highfield Nursery, Stevenage, Herts, and Goodwill; also, the Stock re Young & Dobinson, by Protheroe & Morris.

WEDNESDAY, SEPT. 21 { Dutch Bulbs, at Protheroe & Morris' Rooms.

THURSDAY, SEPT. 22 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Annual Unreserved Clearance Sale of Greenhouse Plants and Shrubs, at the Floral Nurseries, Castle Hill, Maidenhead, by order of the Executors of the late Mr. R. Owen, by Protheroe & Morris.

FRIDAY, SEPT. 23 { Dutch Bulbs at Protheroe & Morris' Rooms.
Imported and Established Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—56.7°.

ACTUAL TEMPERATURES:—

LONDON.—September 14 (6 P.M.): Max., 80°; Min., 60°.

PROVINCES.—September 14 (6 P.M.): Max., 80°, Greenwich; Min., 53°, Off Shetland Isles.

The Orchids of the Sikkim Himalaya.*

A LARGE and important work bearing the above title has just appeared, containing a nearly complete account of the Orchids of Sikkim, with a figure of each, the only exceptions being some half-dozen species, of which living specimens could not be obtained for figuring. It forms volume viii. of the *Annals of the Royal Botanic Garden, Calcutta*.

The nature of the work may be inferred from the introductory remarks of Sir GEORGE KING, in which its origin and progress are very lucidly explained. The following is an extract:—

"For many years Mr. PANTLING had occupied his leisure by making drawings of the Orchids found on the Government Cinchona plantation in Sikkim, where he has lived since 1882. The appearance of the parts of the *Flora of British India*, containing Sir JOSEPH HOOKER's account of the family, gave an impetus to Mr. PANTLING's studies; and when he showed his drawings to me, I most strongly urged him to continue the series until it should include one of each species found in the Cinchona plantation and its immediate neighbourhood. The preparation of these drawings, gradually worked itself into a project for the preparation of a complete Orchid Flora of the Sikkim-Himalaya, each species to be illustrated by a life-size figure of the plant, accompanied by analyses of the parts of the

flower on an enlarged scale. The liberality of the Government of Bengal made it possible to publish the projected work in the *Annals of the Calcutta Garden*, and it now takes form in the present volume, which is the joint production of Mr. PANTLING and myself. The drawings from which the figures were lithographed were entirely the work of Mr. PANTLING, my share in the production of these plates having been confined to the supervision of the lithographers who put them on the stone. . . . For the letterpress Mr. PANTLING and myself are jointly responsible. . . . The drawings have all been put on the stone by natives of Bengal educated at the Government School of Art in Calcutta; and the colouring has, under very careful supervision on Mr. PANTLING's part, been done by the sons of Nepalese coolies employed on the Government Cinchona plantations—boys who had never, until Mr. PANTLING took them in hand, been accustomed to use any implement more delicate than a hoe. Mr. PANTLING's perseverance and skill in drilling these boys into accurate colourists have been a standing marvel to everybody who has seen them at work."

The way in which some of the specimens were obtained is both novel and interesting. It was believed that some novelties might be found "in the alpine part of the country lying between the valley of the Great Rungeet and the higher snows," and therefore "a small party of trained Lepcha collectors was sent during the hot and rainy seasons of several successive years. These men were provided with a few swift coolies, by whom living plants of every species collected were quickly conveyed to Mr. PANTLING, who, while the plants were still fresh, made drawings of them. As a precaution, the collectors were provided with a stock of Formaldehyd, in a weak solution of which they were instructed to preserve inflorescences of every species collected." In this excellent preserving medium the shape of the flowers is retained, and for a considerable time the colours also; and it is in the exact coloration only of flowers of a few of the alpine species thus preserved that a few departures from accuracy are suggested as possible.

The conditions under which the work was prepared are such as to inspire us with confidence in its thoroughness and accuracy. The latter point we are fortunately able to test, for a number of the species are more or less familiar in cultivation, and we congratulate Mr. PANTLING on the accuracy of the drawings and analyses. It should here be remarked that the lithographs in half the edition of three hundred copies are uncoloured, and the remainder partly coloured, and in the latter point the fidelity to Nature is again marked, and thus the plates are invaluable helps in the identification of the living plants. The work is divided into four parts, each having a separate title-page and index, and is issued unbound in two cases, each forming a stout volume.

The number of species figured is about four hundred and fifty (a few of the plates containing more than one species), which are divided into ninety-one genera, from which it will appear that the Sikkim Orchid flora is very rich. Besides the plates and full descriptions, the work is fully provided with analytical keys, by which it is easy to trace the systematic position of any Orchid which occurs within the area treated of. BENTHAM's arrangement of the Order is very largely followed, but a few changes are introduced. For example, Malaxideæ is kept apart from Epidendreæ, and Neottieæ is divided into two tribes, Listereæ and Goodyereæ; while a few of the genera are transferred from their old positions in consequence of changed views as to their affinity. Thus *Ione*, which

had been merged in *Bulbophyllum*, is not only kept apart, but transferred to *Vandea*, together with *Cryptochilus*, *Calanthe*, and *Oreorchis*—a position by no means free from objection.

The most startling innovation, however, occurs in the tribe Ophrydeæ, which is defined as having "anthers two, each with only one perfect cell," and as this is not in accordance with the generally accepted view, Sir GEORGE KING goes into some detail in defence of his hypothesis, which he explains is not shared with Mr. PANTLING, and is therefore published on his own responsibility. His argument may be condensed as follows: if the anther-cells of the Sikkim Ophrydeæ be carefully examined it will be found difficult to explain their structure on the monantherous theory. For, although in some species the anther-cells lie close together, in many they are widely separated, the pollinia being also produced into long caudicles contained in canals, neither caudicles nor canals having any apparent attachment to a rostellum. Moreover, each of the fertile anther-cells bears on its outer surface a rugulose body, which is referred to as the staminode. In certain species the fertile anther-cells are separated by a broad expanse of cellular tissue, and of which the prolonged caudicles are enclosed in forward projecting tubes, there being apparently no rostellum. In our opinion, the Sikkim species of Ophrydeæ have really two anthers, one cell of each of which is fertile and the other infertile. The infertile cell invariably occupies a position on the outer surface of the fertile one, and is the body usually described as a staminode. The two fertile anthers belong, in my opinion, to the inner whorl, the infertile being merged in the column. One of the three stigmas is infertile, and the two lateral are fertile, the fertile ones being quite distinct from each other, or conjoined into a simple or bilobed mass, and the infertile forming a thickened line between the anther-cells, or a more or less developed hood, as in *Diplomeris hirsuta*, which in this character closely resembles the South African *Bonatea*.

These remarks only show how deceptive appearances sometimes are in this remarkable family of plants. The peculiarities pointed out, apart from the interpretation placed upon them, exist in Orchids from many countries beside Sikkim, and the homologies of the different organs are often difficult to make out without very careful analysis. There can be no reasonable doubt that the Ophrydeæ are monantherous, and that the anther occupies the same position as in all the rest of the Monandree, but the connective is often so broad that the two cells are widely separated, and their contents—i.e., the pollinia—quite distinct. The "infertile stigma" is the rostellum, and this is often trilobed, the side lobes being variously united with the anther channels, and developing the glands—to which the pollinia become united—at their apex, while the front lobe may become nearly obsolete. The staminodes invariably represent the two lateral stamens of the inner whorl, and not two infertile cells, as suggested. This division of the anther is not peculiar to Ophrydeæ, for it occurs in *Mystacidium* and elsewhere, though the details are different. This new hypothesis, however, if it fail to explain the facts, is outside the scope of the work, and therefore does not affect its value. It is dedicated to Sir JOSEPH HOOKER, as a cordial token of admiration and respect, and we congratulate the authors on the completion of so excellent a work.

* *The Orchids of the Sikkim Himalaya*.—By Sir GEORGE KING, K.C.S.I., and ROBERT PANTLING. Large 4to, pp. 342, tt. 448. (Calcutta: Printed at the Bengal Secretariat Press.)



FIG. 58.—*LONICERA HILDEBRANDIANA* : COLOUR OF THE FLOWERS BRILLIANT ORANGE-SCARLET. (SEE P. 210.)

THE ROYAL HORTICULTURAL SOCIETY.—Fruit-growing in suburban gardens is not a very easy matter, but that it may be pursued with comparative success is evident from the exhibits of fruit shown from time to time at the Drill Hall. Mr. W. ROUPELL, who has on many occasions shown fruits from his suburban garden that have excited the highest appreciation, is going to read a paper upon the subject on Tuesday next, Sept. 20, when the committees of the Royal Horticultural Society will meet in the Drill Hall, Westminster. Suburban gardeners would do well to exhibit samples of their produce on that occasion.

HUNGARIAN HORTICULTURAL EXHIBITION AT BUDA-PESTH.—The Hungarian Horticultural Society, which is under the patronage of the Minister of Agriculture, intends to hold a horticultural exhibition this year in Buda-Pesth, from October 9 to 16 inclusive. In recent years Hungary has made efforts in all possible directions to improve the cultivation of fruits, vegetables, and flowers, and the Minister of Agriculture is desirous of affording assistance by means of an exhibition of fruit, vegetables, and flowers, and by arranging to have a fruit market. The exhibition, which promises to be on a very large scale, will be held in the afore-mentioned period in the Stadtwaldchen, and in the Vajda Hungader Castle buildings. The object of the exhibition being the improvement of horticulture in general, and in particular in fruit cultivation, the exhibition committee invite all native horticulturists to participate therein, bringing whatever vegetable produce they may have in fresh or conserved conditions, also flowers and ornamental plants, fruit bushes and trees, cut flowers, Roses, specimens of the bouquetist's art, Vine-grafting, table and culinary fruits. Only native cultivators can exhibit these productions; but as the object of the exhibition is the improvement of horticulture, foreign implements, machinery for dealing with the cultivation, drying, and preservation of fruits and vegetables will be allowed to compete; and such object may consist of apparatus for drying, vessels for fruit-steaming and boiling, fruit-grinding, and pressing machines, peeling and slicing tools, &c. In this section awards of gold, silver, and bronze medals will be made by the Hungarian Minister of Agriculture, as well as of silver and bronze medals of the society. No rent will be charged for standings, but the cost of exhibiting any article will have to be borne by the exhibitor himself. Entries in this section cannot be accepted later than Sept. 25. All information in reference to the exhibition can be obtained on application to the *Ungarischen Landes Gartenbau Verein, Buda Pest, (IV. Kev. Korona-hererguterza 16)*.

THE RECENT HOT WEATHER.—During Wednesday, Sept. 7, the thermometer in the shade rose to 87° in London, and 81° at York, but touched 87° at Cambridge, 86° at Loughborough, 85° at Oxford, 79° at Jersey and Liverpool, and 77° so far north as Nairn. The succeeding night to that the minimum readings were 60° in London, very slightly lower at the inland stations and at Parsonstown, and 55° to 57° over the greater part of Scotland. A maximum temperature of 91° in London is by no means unique in July or in August; thus, as recently as July, 1893, we had 92° at Cambridge, and 90° at Hillington; and in August of the same year there was 93° in London and at Stamford, and 92° at Cambridge. For the month of September, however, 91° appears to be unique. The continued drought in the south and south-east of England is now becoming almost a calamity, and although on several occasions the clouds have indicated rain, the movements of the barometer do not tend in that direction.

STOCK-TAKING: AUGUST.—Our last notice of the *Board of Trade Returns* had not a very happy outlook as a conclusive remark; but the figures now before us are of a reassuring nature, and leave the outlook for the remainder of the year altogether more cheerful. The imports for the past month, then, footing up at £37,216,527 show an increase of some £3,845,142 over the sum recorded for August, 1897. The value of imported articles of food, duty free, is in excess of the same

period last year by £1,992,868—largely due to imports of Wheat from the British East Indies. Metals have gone up £181,801; chemicals, &c., £16,342; oils, £193,073; raw materials for textile manufactures—cotton from America and Egypt showing most largely—£632,250; other raw materials, £466,927; manufactured articles have improved by £399,245; perhaps this latter item is not altogether a desirable increase. There is a decrease of £30,674 in dutiable articles; and in Tobacco £120,266 represents the drop in value. By the way, animals for food have shrunk by £157,479. The value of Hops imported last month shows an increase of £6,484; seeds show a gain of £92,913; wood and timber have improved by £21,910. Our usual extract from the summary table is as follows:—

IMPORTS.	1897.	1898.	Difference.
Total value ...	£ 33,371,385	£ 37,216,527	+3,845,142
(A.) Articles of food and drink—duty free ...	11,728,883	13,721,751	+1,992,868
(B.) Articles of food and drink—dutiable	1,940,789	1,910,115	—30,674
Raw materials for textile manufactures ...	2,247,764	2,880,014	+632,250
Raw materials for sundry industries and manufactures	5,635,240	6,102,167	+466,927
(A.) Miscellaneous articles ...	859,078	1,106,032	+246,954
(B.) Parcel Post ..	82,551	106,652	+24,101

The accompanying table relating to fruits, roots, and vegetables is very suggestive and explanatory of many market phenomena, as indicated by the plus or minus signs. The imports for the eight months past show a total of £309,076,495, an increase of £14,511,316 over the corresponding period last year.

IMPORTS.	1897.	1898.	Difference.
Fruits, raw:—			
Apples ... bush.	182,747	116,860	—65,887
Cherries	5,577	34,535	+28,958
Grapes	109,653	236,041	+126,388
Pears	450,616	128,854	—321,762
Plums	471,073	491,668	+20,595
Unenumerated ...	344,533	433,457	+88,924
Onions	639,027	629,799	—9,228
Potatoes ... cwt.	68,764	90,989	+22,175
Vegetables, raw, unenumerated ... value	£186,375	£207,716	+£21,341

EXPORTS

for August foot up at £20,186,016, an increase of £1,412,019 over August, 1897. It is worthy of note that machinery and mill-work have increased by £273,093, textile machinery of the value of £80,000 having gone to Russia and Germany, £50,000 worth to the East Indies. The greatest increase is in fish exports, the amount being £305,217, herrings standing for £295,985; metals, and articles manufactured therefrom, excepting machinery, show an increase of £241,810; yarns and textile fabrics are better by £228,678; nor must we omit, in conclusion, to record an increase in "apparel and articles of personal use," amounting to £64,725. The exports for the eight months show a decrease of £4,901,828 as compared with August in last year; but there are yet to be recorded the figures for the four remaining months of 1898.

PRESENTATION TO MR. D. ROBERTS.—The influence in a district of a properly managed, energetic, association of gardeners, who occasionally meet to debate questions of horticultural interest, we have always appreciated. That the work such an organization occasionally inflicts upon the secretary is very great, we have had experience, and it is pleasant to record instances where the members themselves are appreciative of good work rendered by their secretary. On the 6th inst., the members

of the Loughborough and District Gardeners' Mutual Improvement Society at a dinner following upon the Annual Show of Dahlias and Gladioli, &c., presented their hon. secretary, Mr. D. ROBERTS, of Prestwold Hall Gardens, with an illuminated address and a purse of gold. In this address were words of warm acknowledgment of the work Mr. ROBERTS has done on behalf of the society, and of respect to him personally. In acknowledging this gift, Mr. ROBERTS said that all he had yet done, had given him the greatest pleasure to perform, and had they delayed the honour for 21 years, he might have hoped that in some measure he would have been deserving of their kindness.

MESSRS. TILLEY BROTHERS, OF BRIGHTON, have recently held an exhibition of vegetables and flowers upon their premises at Brighton. The produce was from the firm's customers only, and £25 were offered in prizes. The Potatoes are described as very satisfactory, and vegetables generally were good.

BAMBOOS AND ARCHITECTURAL FEATURES.—The monopoly enjoyed by the Weeping Willow threatens to be broken down. We have lately seen some Bamboos in association with monumental urns and similar constructions, and the effect was excellent.

CANNAS are now to be seen in most of the continental cities, being generally grown in raised mounds or beds, surrounded by an edging of various plants. To our thinking this edging is an impertinence. The plants, which have no little dignity of appearance, show to better advantage when springing direct from the turf, than when encircled by common bedding-plants. The same remark applies to beds of *Phormium tenax* and *Caladium*.

ALNUS IMPERIALIS, ETC.—It is as well to mention this, for though by no means new, it is not appreciated as its merits deserve. It is a very graceful tree, with deeply-cut foliage, and is a good town tree. *Pterocarya fraxinifolia* is also used with good effect in many continental towns.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual dinner of this society will take place at the Holborn Restaurant on Wednesday, October 5, at 6.30 P.M., at which Mr. GEORGE BUNYARD, V.M.H., of Maidstone, has kindly consented to preside.

A WATER-COLOUR DRAWING BY HER ROYAL HIGHNESS THE PRINCESS OF WALES.—We have received from the editor of *The Gentlewoman* an advance copy of an original water-colour drawing, recently sketched in Denmark by the Princess of WALES, which is to be presented as a supplement to *The Gentlewoman*, by the gracious permission of Her Royal Highness. It is to accompany the issue of the paper dated 17th inst., at the usual price of sixpence. The drawing is a daintily-coloured sea-scape, depicting a jetty and a wide expanse of still water, with a city in the background, the time evening.

CRIMSON RAMBLER ROSE.—In the note on the magnificent plant figured in our last issue, Mr. MARSHALL tells us we have erred in exactly dividing it into so many shoots, and giving to each shoot a certain number of blossoms; but he adds in all fairness, that the total number remains unaltered, and he is prepared to take the responsibility for that. The exhibition at which he saw the variety for the first time was the International Horticultural at Earl's Court, and the Gold Medal awarded was theirs.

LÆLIO-CATTLEYA × SCHILLERIANA.—This cross has again been raised artificially, this time by M. CH. MARON, of Brunoy, who records, in the *Revue Horticole*, July 16, p. 335, having obtained a hybrid between *Cattleya amethystina* syn. *intermedia*, and *Lælia purpurata*. He has named it *Lælio-Cattleya × elegans*, but the so-called white forms of *C. elegans* really must be referred to *Schilleriana*, to which this new variety likewise belongs.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting of the Floral Committee on August 10, the committee awarded First-class Certificates to the Horticultural School of Wageningen, for *Canna* hybr. O. J. Quintus; to Messrs. E. H. KRELAGE & SON, of Haarlem, for *Chrysanthemum maximum* Triumph, *Dahlia* (Cactus) Leonora, D. C. Regulus, D. C. Ruby, *Gloxinia hybrida grandiflora* Cyclop, and *G. hybr. g. Goliath*; to Mr. W. VAN VEEN, of Leiden, for *Chrysanthemum maximum* Triumph, and *Dahlia* (Cactus) Britannia; to Mr. K. WEZELENBURG, of Hazerswoude, for *Chrysanthemum maximum* Triumph; to the Horticultural School of Frederiksoord, for *Heliotropium peruvianum* fol. varieg.; to

culous and [painful excess, but was at length ridiculed out of existence. For this improvement of taste, horticulture is mainly indebted to Mr. WILLIAM ROBINSON. Still, it was not the practice itself that was wrong, but the excess in its use and its adoption everywhere, often in the most unsuitable situations. There are, we fancy, some indications of a revival of the bedding-out system; if so, we trust it will be used with discretion and taste, and, above all, in suitable places, as in association with architectural features. Some richly-coloured and well-harmonised beds may be seen on the terrace of the Palais Federal, at Lausanne, on either side of the building. The rich coloration of the flowers was remarkable, and not less their skilful combination.

crop not exceeding one-third of the normal; and in seven States the crop is reckoned at from one-third to one-half of the normal; five States are placed at from half to two-thirds of a crop. The satisfactory indications are very limited.

HORTICULTURAL PROSPECTS IN CANADA.—Business shows a marked improvement this season. Although in some parts of the country drought has been injurious, as a whole the crops are very superior, and as prices will be good, there will be a considerable amount of money to spend. In fruit there is no large amount of planting being done, as for a number of years past there seems to have been over-production in small fruits, Peaches, Pears, and Plums;

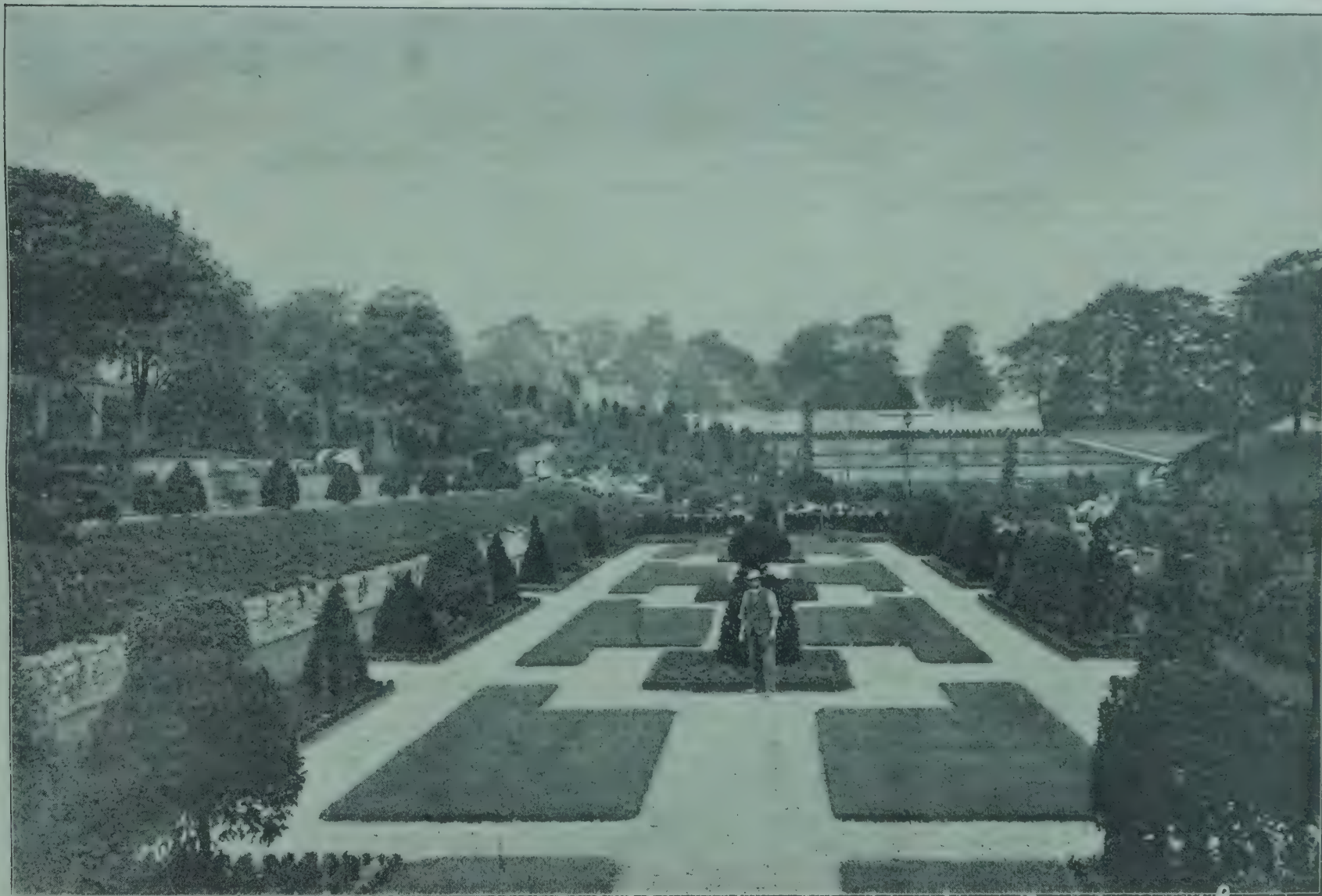


FIG. 59.—VIEW FROM ONE END OF THE FLOWER GARDEN AT THORNBRIDGE HALL, BAKEWELL, DERBYSHIRE. (SEE P. 222.)

Messrs. GRATAMA & Co., of Hoogeveen, for *Rosa* hybr. *bifera* Souv. de Mme. Joseph Méline, and *R. indica* *fragrans* Madame Yvonne Gravier; and to Mr. G. A. VAN ROSSEM, of Naarden, for *Rosa indica* *fragrans* Auguste Waltine. Certificates of Merit were awarded to the Horticultural School of Wageningen, for *Canna hybrida* *Oranjevlag*, and *C. h. Wageningen*; to Mr. K. WEZELENBURG, of Hazerswoude, for *Centaurea montana* *rosea*, and *Chrysanthemum maximum* *filiferum*; and to Mr. G. A. VAN ROSSEM, of Naarden, for *Rosa indica* *fragrans* Mdle. Anna Chartron. A Botanical Certificate was awarded to the Botanical Garden of Leyden for *Boea Commersoni*.

BEDDING OUT.—A quarter of a century ago or rather more, belts and beds of violently-coloured flowers were to be seen everywhere, in places fit and in situations unfit. The thing was carried to a ridi-

ASPARAGUS SPRENGERI, FOL. VAR.—We read in American gardening journals notes upon the white variegated form of the pretty decorative *Asparagus Sprengeri*. If the variegation be constant it is likely to add greatly to the attractiveness of the plant, especially by artificial light.

CROPS IN THE UNITED STATES.—The following particulars are taken from the August report of the Agricultural Department, just received. Spring Wheat: Average condition, 96.5, or 1.5 points higher than last month, and 9.8 above the average at the same date last year, and 13.5 points over August average of the last ten years. Potatoes: The fall in July has been succeeded by a rise of six points as compared with the same date last year, and 3.2 points below the August average of the previous ten years. Apples: In some half dozen States the indications are for a

but farmers generally are buying more freely, and the business prospect is brighter than for a number of years. There is said to be ample stocks in Canada to supply all needs.

CARNATIONS IN THE OPEN.—Our correspondent, "B., East Lothian," desires us to say, that Sept. 15 is the latest date at which he plants the layers, not the whole of the month, as stated by him on p. 195.

GHENT.—At the last meeting of the *Chambre Syndicale des Horticulteurs, Belges*, the following awards were made, viz., Certificates of Merit to M. A. GALLET (*par acclamation*), for seventy varieties of *Canna indica*, and a tuberous *Begonia*, with blooms like those of a *Chrysanthemum* (*à l'unanimité*); to MM. DE REUSSE BROTHERS, for *Dracæna De Reusse*; to M. VAN STEENKISTE, for seedling Lily Madame

Van Steenkiste; and to M. MAURICE VERDONCK, for a hybrid *Odontoglossum*.

PUBLICATIONS RECEIVED.—*Report on the Progress and Condition of the Government Botanical Gardens, Saharanpur and Armagh, for the year ending March 31, 1898.*—*Orchid Review*, for September.—*Indian Gardening*, Index to vol. ii., January to June, 1898.

THORNBRIDGE HALL.

THIS residence and estate, recently acquired by George Jobson Marples, Esq., is situated about two miles from Bakewell, in the Peak district of Derbyshire, standing upon a plateau about 500 feet above sea-level. It is sheltered on the north-east by Longstone Edge, a chain of hills running up to Buxton, whilst on the east and south the views are lovely and varied; hill and dale diversified by woods, and cultivated land stretching away to a ridge of hills contiguous to Matlock and Chesterfield. The estates of Chatsworth and Hassop adjoin that of Thornbridge in such a manner that the general effect is one of continuity. When Mr. Marples purchased Thornbridge, it had practically only about 20 acres of parkland. Of the adjoining fields, with their rough stone dividing walls, about 100 acres were purchased, the walls removed, plantations laid out, and ornamental lakes made, and an approach road from the Bakewell side was constructed. The work of constructing the latter, which is about 700 yards in length, proved a heavy task. To obtain low even grades, cuttings, in some places 12 feet deep, had to be made, and many thousands of cubic yards of soil, boulders, &c., to be removed; this was utilised in forming mounds and embankments for the lakes. Trees and shrubs of an unusually large size have been planted, so as to afford immediate effect, and the result is very fine.

Great care was exercised to have the ground well and deeply trenched, and the results have fully justified the expenditure on this item. The slopes of the drive have been clothed with Heather, and in some steep places rockwork has been introduced, and masses of Fern, Gorse, Cotoneaster, Junipers, and similar low-growing plants used to cover it. The drive passes through a pinetum planted with choice Conifers, now ranging from 6 to 10 feet high; and clumps of tall deciduous trees, Rhododendrons, and other evergreens.

After rising about 100 feet the drive terminates in an outer square court, surrounded by splendid Beech, Sycamore, Elms, Yews, &c. This outer court is connected with an inner one by another short road opposite to the main entrance, on the west side of the Hall. Here, a little to one side, a winter garden is being constructed, with underground caves, cascades, and a miniature lake. This conservatory is about 50 feet by 40 feet, and 20 feet in height. It will be planted in a natural style, chiefly with Palms, Tree-ferns, and flowering greenhouse-plants, whilst in the caves filmy and other Ferns will be introduced.

The garden on the south side of the Hall is laid out in two main terraces, the upper one being separated from the lower by a wall 4 feet high, which is clothed with evergreen creepers, and has a border at the foot for the growth of dwarf plants, bulbs, &c. Both these terraces are in grass, and are intended for promenades and for playing games. They are protected at the west end by old Beech, Holly, Yew, and other trees. At the east end of these terraces is a pannelled Rose-garden, surrounded by clipped Yew-hedges.

The east, or garden front of the Hall is by far the finest feature of the place. Upon this part of the ground there used to be a kitchen-garden and pond, both of which have been done away with, and the following arrangement carried out.

Leaving the Hall by the garden entrance, a broad terrace is crossed which runs the whole length of the building, affording the effect of a solid base. Next comes a wall 4 feet high of equal length covered with creepers, with a grass slope descending from it to the main promenade which runs from the Rose-garden to the fruit-houses, 150 paces or so, and passes at its

north end under a massive rocky archway—in reality a portion of the alpine-garden. From the main promenade before mentioned, a Dutch garden with lakes and cascades, &c., is seen; whilst on the rising ground beyond many hundreds of large Rhododendrons and other shrubs are planted.

The illustrations (figs. 59 and 60) afford a good idea of the effect produced. The Dutch garden is formed 9 feet below the main promenade, and surrounded by Yew hedges enclosing clipped specimens of green and golden Yews and Hollies, both standards and pyramids.

The small beds are filled with low-growing bright-coloured evergreens, and upon the grass panels it is the intention of the proprietor to have beds for flowers. The alpine garden (together with the garden lakes) cover about $1\frac{1}{2}$ acres. The ground falls from north to south about 60 feet, and is traversed by a small stream, which is used to form a series of cascades. Mr. Marples' desire was to have a natural-looking piece of rockery upon which he could have great masses of free-growing alpine plants and shrubs, and to avoid all weakly growing species which require special care. This object has been attained; the rock garden, although planted last year, is now covered with the plants. On the north of the alpine garden and adjoining it, a terraced fruit garden in three tiers, promises to become a most useful as well as an ornamental adjunct. Above this again stands a range of glasshouses in five divisions for the cultivation of Vines, Peaches, and flowering plants. It is in contemplation to erect another range of glasshouses, and to form a new kitchen-garden north of the present fruit garden. The whole of the alterations in the park and garden, as we learned, were entrusted to Messrs. J. Backhouse & Son, nurserymen, of York. Though this firm gave designs for the bulk of the work, many of the ideas originated with Mr. Marples himself, who has shown himself ever ready to adopt suggestions which he considered would add a charm to his future home.

HOME CORRESPONDENCE.

MONTBRETIAS (TRITONIAS).—In your issue of September 10, p. 200, Mr. Conway takes exception to my remarks respecting the cultivation of these beautiful Iridaceous plants. I maintain that the majority of cultivators will find great advantage in annually lifting the bulbs, as directed in my note; not so much for the purpose of protection in winter (the hardiness of the Montbretia was not brought into question), but in order that the small weakly growths may be removed, and either destroyed, or planted by themselves till in course of time they become flowering bulbs. The reason for this, as I stated before, being to dispense with these flowerless growths, in order to favour the full development and maturation of the flowering bulbs; and the only means of ensuring maturation is to lift annually, and, in my opinion, this is best performed in the autumn, thereby insuring protection in the event of an unusually severe winter. Few gardeners can afford to take in hand any unnecessary work; but I contend that the simple instructions I have laid down, if followed out, will amply recompense the cultivator for his trouble. Quite as much pains are often taken over many less useful and beautiful plants grown in our gardens, than I advocated in my notes respecting the Montbretias. *H. T. Martin, Stoneleigh.*

While I have found *M. Pottii* absolutely hardy, without even a mulching of leaves or coal-ashes put over the roots during the winter, I cannot say the same of *M. crocosmiflora*, and strong clumps of the latter are sometimes killed outright under conditions of culture similar to that given to *M. Pottii*. The soil of this garden is somewhat heavy, and consequently cold in the spring, therefore less suited to the safe wintering of bulbous or tuberous-rooted subjects than a light loam. No difficulty, however, is experienced with even *M. crocosmiflora*, if at planting time the natural soil is removed 15 inches in depth, the bottom broken up so as to admit of the rapid drainage of water to lower depths, and the whole filled with charred soil, leaf-mould, grit, and the refuse soil from the potting-bench. Early in the autumn, when the leaves of the plants have decayed, a thick mulching of partially

rotten leaves is spread over the soil as a protection against frost, and treated in this manner I have never failed to obtain success with this plant, which is one of the most effective of hardy border flowers. In and around Cromer this variety of Montbretia is to be met with in hundreds of gardens, large and small, and judging from the luxuriance of its growth, the plant is quite at home in the sandy soil of that part, giving little trouble in its cultivation. *E. M., South Hants.*

THE ROYAL HORTICULTURAL SOCIETY'S FRUIT SHOW.—I think the correspondent (p. 199), who complains of want of clearness of the R.H.S. fruit schedule must have written his paragraph before perusing its pages, for I find each question asked fully answered in the notes on p. 8, and in the regulations for the exhibition, both of which every exhibitor should certainly read throughout. The requirements state that all fruits must be absolutely grown by the exhibitor or his employer, and the number of fruits to constitute each dish is plainly stated. I am, however, at a loss to understand why exhibitors in Division 5 are barred from exhibiting in Division 1, so that should a grower from Scotland, Wales, or either of the county divisions exhibit Apples or Pears, he is excluded from showing Grapes, or collections of indoor fruits. *H.*

THE MORRAB PUBLIC GARDENS should be spelled MORRAB GARDENS.—These gardens have their entrance in Morrab Road, in which road in 1894 I lived for some time, and therefore know the gardens well. It is unfortunate that the view does not show at least one of the tall *Dracenas* (I forget which species) for which the grounds are famous. *W. Thomson, Bishop's Teignton.* [Another result of indistinct handwriting. *ED.*]

LATE SWARMING OF BEES.—On September 5, while walking round the park looking for wasp's nests by day, so as to destroy them at night, I observed, to my surprise, a swarm of bees settle on a Thorn-bush. I quickly went to the gardens for a hive and shook them into it. Several aged inhabitants of the place to whom I mentioned the circumstance, said that they never knew bees to swarm in the month of September. There is no doubt the heat of the weather was the cause of the swarming at so late a date. The swarm is considered to be a good one. *W. Mould, Ledgers Park Gardens, Chelsham, Surrey.*

THE NEW FLOWER GARDENING.—I imagine your correspondent writing under the initial of "K." extracts more out of the above article than it originally contained. The Hollyhock was one plant I referred to, the Carnation another, while "K." may rest assured that spring and summer bulbous plants such as Crocuses, Tulips, Narcissus, &c., transplant safely immediately the flowers are over. *Lilium elegans* is another plant that transplants well at its time of flowering. I need only add that "K.'s" remarks about herbaceous borders in no respect apply to those in Regent's Park. *B.* [Many species of plants are transplanted at unusual periods of their growth; but hardy herbaceous perennial plants, even at Regent's Park, are not removed when approaching flower, unless in a few cases. *ED.*]

A PROFITABLE COMPETITION.—I observe in a paper of the largest circulation amongst the working-classes, mention of a recent great competition in one particular variety of Onion—Golden Rocca. There were no fewer than 761 lots of three Onion-bulbs each sent in, and that works out as 2283 in all. If those bulbs were left on hand for any purpose, seed-production or otherwise, they would represent a big sum in value. Then as no fewer than 761 competitors entered, it is not unreasonable to assume that 800 at least purchased seed; so that the sum of £25 offered in prizes was reimbursed with interest. But hundreds of the persons encouraged to compete were cottagers and allotment-holders. It would be interesting to learn how many of these were amongst the eight prize-winners, and what chance had these in competing against first-class gardeners. It must be remembered that there were no fewer than 753 who were unsuccessful. *D.*

THE ORIENTAL PLANE.—Referring to the note on species of *Platanus*, in the last issue of the *Gardeners' Chronicle*, p. 190, I lately saw what I thought was a remarkable specimen of the Oriental Plane, growing in the garden at Blickling Hall, Aylsham, Norfolk. The tree in question was of great age, as was shown by the stem, at 1 yard up from the ground being fully 4 feet in diameter. The remarkable feature about this tree was its manner of growth. The lower branches had reached the ground many

years ago, and being allowed to remain undisturbed they had struck root in the turf, and doubtless had imparted vigour to the tree. These rooted branches grew erect for many years, and they then bent down to the earth and again took root. This sort of natural layering had gone on for many years, increasing the diameter of the tree considerably, until it now exceeds 50 yards. Many of the secondary growths are of the size of small trees, and the whole constitutes a remarkable feature. The gardens at Blickling are thrown open to the public by the owner, the Dowager Marchioness of Lothian, on certain days in the week, a privilege much appreciated by the visitors to Cromer. *E. Molyneux.*

AT WHAT AGE SHOULD SEEDLING STRAWBERRIES BE CERTIFICATED?—Two recent examples, Monarch and William Carmichael, have recently afforded some useful hints to growers on this point. Those who raise new varieties are naturally somewhat

italics are mine, as I wish to draw special attention to the subject, having seen many fine crops of Strawberries pushed past blooming, or with scant flowering, through excessive feeding. Still, a very curious point in connection with some new and also old varieties of Strawberries, is their attempts to revert from an apparently fixed form of fruit and growth and flower. Monarch and William Carmichael are our most-modern illustrations of these peculiarities. In the first row of William Carmichael, seen by the writer, there was scarcely a barren plant, and its character and quality were all that Mr. Bunyard describes them to be at Maidstone. The next year, almost the whole stock proved barren; hence its withdrawal from commerce by its raiser on the advice of his friends. And yet, now, with a change of site and soil, from Edinburgh to Kent, all its original free-fruited qualities are restored. What can it all mean? In the case of these modern varieties, is it a struggle for the supremacy of the

exception of a few daintily bunched alpine in the early spring and autumntide, I have never eaten a Strawberry in France comparable to our best British sorts. *D. T. Fish.*

LAW NOTES.

FLORISTS' CHECKS.

AT Brentford County Court, on Friday, before His Honour Judge Bagshawe, Q.C., Isaac Thornton, ironmonger, of Chiswick, sued Wm. Hills, of Bury Street, Lower Edmonton, and Covent Garden, florist and fruiterer, for £3, the cost of making a quantity of metal checks.

Mr. Leonard Wells was for the plaintiff, and Mr. Medcalfe for the defendant.

Plaintiff received an order on April 1 from the

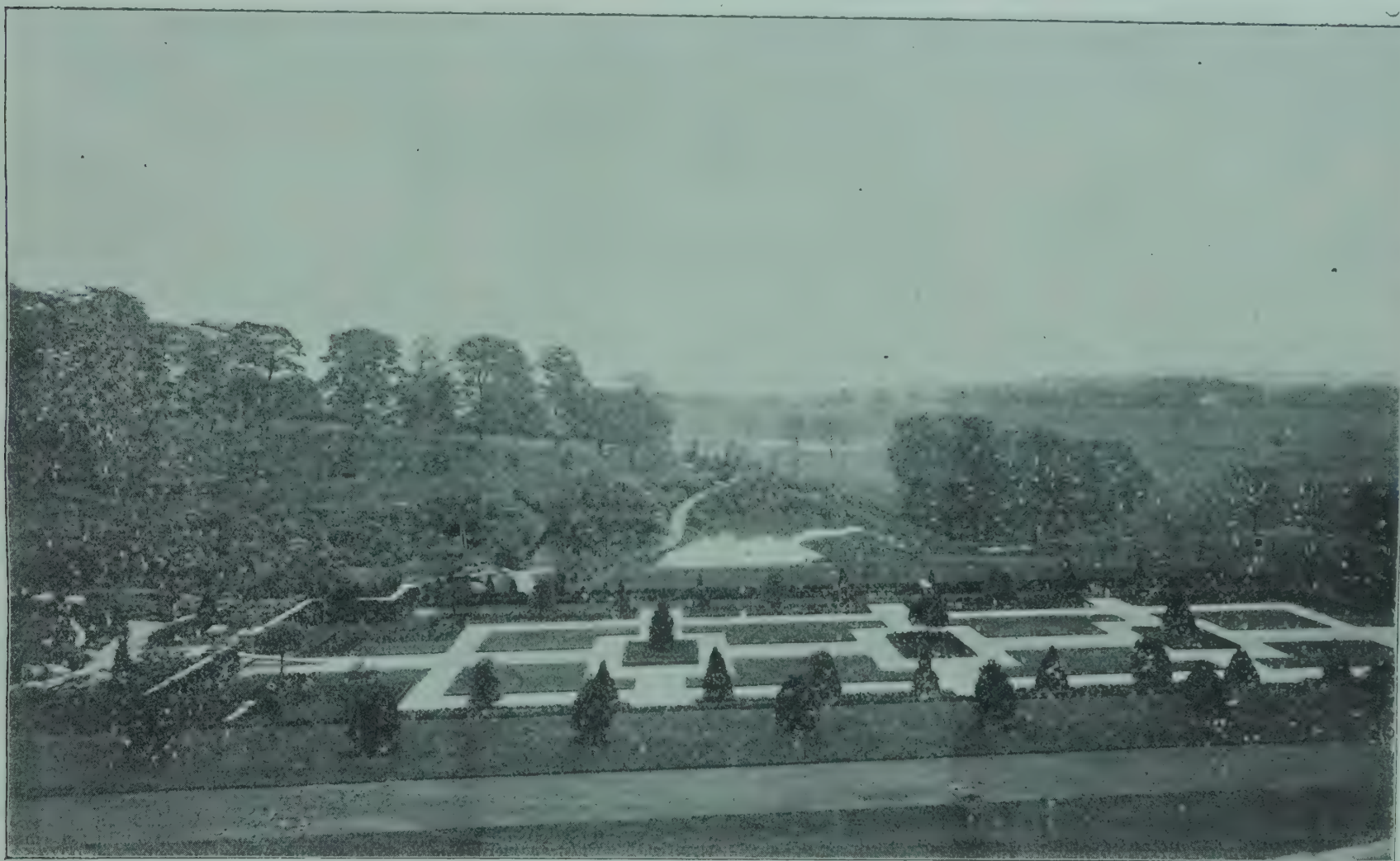


FIG. 60.—VIEW FROM THE SIDE OF THE FLOWER-GARDEN AT THORNBIDGE HALL, BAKEWELL, DERBYSHIRE. (SEE P. 222.)

impatient for results. Hence, when a seedling Strawberry, two, three, or more years old succeeds in convincing competent jurors of its merits as a novelty, it seems entitled to a certificate or some kind of award to mark its merits. And yet, in the end, probably the raiser would gain rather than lose could his seedlings be subjected to a longer probationary period before being sent out as varieties that were better or different to existing ones. The trial grounds of the Royal Horticultural Society, at Chiswick, could be turned to no more useful account than as trial grounds for seedling Strawberries. And it would not seriously tax the coffers of the society to provide at least three kinds of soil for this purpose, that might be correctly described as heavy, light, and medium loams. Some persons might say that two sorts of soil, poor and rich, would suffice—but it would cost but little more to provide a third; and animal and artificial manures might be tested as to their fitness for application to these plants. I particularly note that Mr. George Bunyard, nurseryman, of Maidstone, a high authority on this subject, specially notes, that the sorts were grown on poor soils. The

paternal or maternal parent, or are these and other seedling Strawberries merely asking for more time for fixing their characteristics? Then, why are some Strawberries so erratic at first, and others by the same raiser, such as Queen of Denmark, Richard Gilbert, Britannia, assume and retain their true character at the first? Further, and beyond all this, why should the change of William Carmichael Strawberry from Edinburgh to Maidstone restore or, even, increase its primitive fertility? One word more, and it is one of warning. I have lately seen or heard it stated that growers may safely propagate from blind plants. To any disposed to listen to such advice, I would like you to print in the biggest type, the single word—"Don't." In the interesting article on "Strawberry Culture in France" (p. 102), the following puzzling sentence occurs:—"The varieties which have no runners, such as the Gallion, is naturally good for outdoor culture." Might I venture to ask the writer, or some one well versed in French varieties and culture, why runnerless varieties are preferred? And may I venture to add that with the

defendant for 1000 metal checks. He had executed such orders before, and had a die by him, but as the defendant required fresh numbers on the checks, a fresh die had to be constructed. Plaintiff at once sent to the Mint, Birmingham, to have the die made, which came to hand in the early part of May, when the stamping of the checks was at once put in hand.

Plaintiff, in giving evidence, said there was no delay, and it was not until May 13 that he learned the defendant required them by a certain time. When they were sent they were returned.

In cross-examination, he knew defendant was a gardener and had a stall in Covent Garden, and that these checks were necessary in his business. He denied, however, that he knew the gardening season ended in May, and that if the checks were not delivered early in April, they would be valueless. He did business among gardeners, and some had to wait longer than the defendant for their checks.

Mr. Medcalfe called the defendant. He admitted

giving the order on the written form produced. He needed the checks urgently, and quite expected them in a fortnight, as plaintiff had executed similar orders for him in that time. On May 8 he wrote complaining of the delay, and the trouble he was in consequence being put to, and this letter plaintiff acknowledged. Defendant then wrote stating that he must have the checks by May 13, or he should repudiate the order. They did not arrive until three or four days afterwards.

Cross-examined: His letter of the 13th would be received on that day.

His Honour: Then it would be utterly impossible for him to comply. The time given was unreasonable. Why were these checks useless? You could use them next season.

Defendant: They would require a fresh number probably.

His Honour: If there is a probability they will, there may also be a probability they won't. He found for the plaintiff. In the order there was no time specified, and he did not find any evidence of undue delay for which the plaintiff was responsible. The orders for the dies were sent to a big firm in Birmingham, and the inference was, that they executed the order with due diligence. Judgment for the plaintiff with costs.

WIMBLEDON HOUSE.

THIS pleasantly-situated House and estate, for many years in the occupation of the late Sir Henry Peek, is, we fear, shortly to come into the market, and the probability is that the house will be pulled down, and the estate parcelled out in building-plots. When the mansion was the residence of Sir Henry and Lady Peek, the gardens were among the most beautiful in the neighbourhood of London, the pride of their owner, and the joy of horticulturists, as they were well-kept, and contained a great number of rare exotics. After the death of Lady Peek, however, Sir Henry apparently conceived a dislike to the place, and for the last four or five years the house has stood empty, and the grounds have been neglected, flower-beds and paths choked with weeds.

Built about the middle of the last century, Wimbledon House has been the residence of a long list of notable persons. On the death of its first owner, Sir Henry Bankes, a London Alderman, it was bought by Benjamin Bond Hopkins, heir of the celebrated "Vulture" Hopkins, and M.P. successively for Ilchester and Malmesbury. From him it was purchased by M. Calonne, of French Revolution fame, and from him again by Earl Gower, afterwards Marquis of Stafford. Subsequently it became the home of the Prince de Condé, and between his occupancy and that of Sir Henry Peek it was for many years the abode of Mr. Joseph Marryat, M.P. (father of Captain Marryat the novelist), and of his widow. It was in Mrs. Marryat's time that the gardens achieved fame as including the finest private collection of exotics in England.

Frequent mention of the horticultural treasures of the place are to be found in our earlier volumes.

On September 10, 1870, we figured the very ornate gardener's cottage; and on January 22, 1876, we gave an illustration of an Ivy-covered Oak. The flower-garden was a unique example of the fashion of the forties in design and in furnishing, few alterations having been made since the time of Mrs. Marryat.

THE BRITISH ASSOCIATION.

(Concluded from p. 202.)

SECTION K. — BOTANY.

SEPT. 8.—The President of their section is Professor F. O. Bower, F.R.S., who discussed in his address the homology of the members of the plant body at large, with special reference to the question of homology involved in the alternation of generations in green plants. After a reference to the importance of the work of Steenstrup and Von Sachs, both of whom died in the course of last year, he said:—

I propose to invite your attention to the morphology of plants. The present time is one of unusual bustle and change in morphology, consequent upon the discovery of new facts, and the introduction of new methods. The

development of the study may be divided into three periods, we ourselves standing upon the threshold of the third. These three phases of morphological inquiry have naturally overlapped one another; we recognise, however, that first description, then formal comparison, and now experiment, have been the leading features in morphological investigation during these successive periods.

HOMOLOGY.

The ideal aimed at in the study of the morphology of plants is to trace their real relationships and mode of origin, on the basis of the widest observation—in short, to reconstruct the evolutionary tree. In order to make comparison possible, or at least manageable, a terminology is necessary, and this not only of the plants themselves, but also of their parts. I propose to-day to discuss not the classification of plants, but the classification of the parts of plants, their grouping according to their homology. A reconsideration of the term is necessary; is it to be applied equally to such parts as are connected by linear descent, and also to those which we have good reason to believe have resulted from parallel development in quite distinct phyla? Or, to put a finer point upon our enquiry, are we to distinguish in any way the cases of "individual repetition" from those of "essential correspondence"? In the latter case I think no good end would be served at present by accentuating this distinction by terms; the steps of divergence are so slight and gradual. None the less should it be clearly borne in mind that comparisons of parts commonly ranked as homologous in the plant body are based on a less complete individual correspondence than that of parts usually compared in the animal body. But the case is different in dealing with parallel developments, and some doubt arises whether parts which probably, or it may be certainly, have arisen by separate evolutionary sequence in distinct phyla are to be classed as homologous in the same sense as those directly related by descent. The successive foliage leaves of most plants are assumed in the individual to be the result of a mere repetition of development. But it is quite a possible view that in the plant-body (as is contemplated in the animal in those cases of "serial homology" which Lankester recognizes as homoplastic) homoplasy may have had a place. We must inquire whether all those structures which we designate "leaves" have actually been the result of a development identical, or at least essentially similar, as regards their origin in the race. The problem is, given a plant with numerous leaves of various form and function, to unravel the real story of their evolution. Two distinct factors may be contemplated as possibly occurring even in the individual—viz. (1) homogeneity of genetically related parts, with or without repetition of the parts formed; (2) homoplasy, an origin of two or more distinct categories of parts, not genetically related, on the same organism. Working upon either of these, and thus complicating the problem by obliterating such distinctions as may have existed at first, may be the phenomenon of metamorphosis. This has lately received its evolutionary definition at the hands of Professor Goebel, as restricted to those cases where there has been an obvious change of function. We see how change of function accounts for various forms of leaf in certain cases; but it does not follow that all leaf-forms on the same plant were so produced, by metamorphosis of a single original type.

ALTERNATION.

But the questions above discussed are mere matters of detail, compared with that great enigma of the alternation of generations in green plants, or of alternation at large. This is, after all, a question of degree of homology, not now of the parts only, but of the whole plant or "generation." How this greatest of all adaptations was really initiated, we cannot expect to bring to the point of demonstration; at best we can only venture opinions of probability. Still, this discussion commands at present more widespread interest among botanists than any other in the sphere of plant morphology. It is the alternation as seen in these green plants that I propose to discuss. Writers have distinguished various types of alternation, including under the term divers modes of "alternation of shoots." But gradually the issue in the case of green plants has been simplified, and the question now centres round that alternation of phases which some of us describe as "antithetic," while others believe the phases to be really "homologous" as regards their origin. Briefly put, the question is, How was the first start made? Has the neutral generation or sporophyte been the result of change of any other part of the sexual generation than the zygote itself? If so, the alternation is of homologous generations; if not, then the alternation is what is styled antithetic. The whole discussion is like a purely historical inquiry, but with the minimum of documentary evidence, for on this point the fossils give scanty help. In the absence of more direct evidence we are thrown back on other arguments, such as those based on comparison of normal specimens, and, secondly, upon the study of abnormalities.

The President, after a somewhat minute and technical inquiry into (1) the bearing of the Algae and certain fungi on the question, (2) the comparison from the Bryophyta, and (3) the argument from abnormalities, continued:—

This discussion was entered on with a view to finding whither phylogeny as a basis of morphology would lead us. However unprepared we may be to pursue it with certainty into detail, or to apply a terminology to the sequences which we recognise, we must, I think, accept phylogeny as the natural basis for morphology. I do not think that any middle course between this and an artificial system is possible or reasonable. But here we launch ourselves upon a sea of uncertainties on which we must keep our course with care. Following it, we think we espy certain great move-

ments in Nature. We may recognise what we believe to be a true evolutionary sequence, but who is to say whether it is a progressive or a retrograde sequence? it may even be one divergent from some middle point. There is no finality to this judging of probabilities, a fact which should be always before the mind, especially in the warmer moments of discussion.

CATEGORIES OF ORGANOGRAPHY.

We may now briefly review our position as regards organography, and the following categories are to be recognised, though they graduate almost imperceptibly into one another:—Homogeny includes (a) repetition of the individual part in successive generations, with the same number and position; (b) essential correspondence of parts varying in number and position but corresponding in character and development, produced in a regular sequence; and (c) transferred position of parts, similar in origin and structure to those produced in regular sequence. Homoplasy may be recognised with varying degrees of probability, starting from cases where the question of community of descent is open (as with nearer circles of affinity), and proceeding to those in which distinct evolution is virtually certain. Taking the case of leaves for the purpose of illustration, we may contemplate the following possibilities:—(a) A possible origin of two homoplastic series of leaves in the same plant, and the same generation (Phylloglossum); (b) two homoplastic series in the same plant, but in different generations (Lycopodium cernuum); (c) a possible distinct origin of homoplastic leaves in distinct phyla, but in the same generation (sporophyte of Ferns, Lycopods, Equisetaceae); (d) a distinct origin of homoplastic leaves in distinct phyla, and distinct generations (e.g., leaves of Bryophyta and of Pteridophyta). Now, homology has been used in an extended sense as including many, or even all, of these categories. It seems plain to me that this collective use of the term homology carries no distinct evolutionary idea with it; it indicates little more than a vague similarity—the word will have to be either more strictly defined, or dropped. The old categories of parts based upon the place and mode of their origin are apt to be split up if the system be checked by views as to descent. Comparison, aided by experiment, supersedes all other methods, and the results which follow raise the question of terminology of parts which have arisen by parallel development. In parts which are of secondary importance, such as stipules, pinnae, the indusium, hairs, glands, the inconstancy of their occurrence points to independent origin by parallel development in a high degree; in parts of greater importance, such as leaves, a parallel development may also be recognised, though in a less high degree. Finally, the sexual organs are probably homogenetic in all Archegoniate plants, but we have no proof that sexuality arose once for all in the lower plants; the probability is rather the contrary. Thus we may contemplate as very general a polyphyletic origin of similar parts by evolution along distinct lines, but resulting, it may be, in forms essentially similar.

METHODS OF TERMINOLOGY.

There are two extreme courses open to those who wish to convey clearly to others such matters as these; the one is to use a separate term for each category of parts, which can be followed as maintaining its individual or essential identity throughout a recognised line of descent. The other course is to make it clear always in the use of terms applied to parts, that they do not convey any evolutionary meaning, and to use them only in a descriptive sense. Perhaps the former is the ideal method, and it may be a desirable thing, as polyphyletic origins of parts become more established, that the terminology should be brought to reflect at least the more important conclusions arrived at. But, for the present, the whole matter is still so tentative that it is well to be content with something which falls short of the ideal, and to maintain the usual terms, such as stem, leaf, root, hair, sporangium, &c., as simply descriptive parts which correspond as regards general features of origin, position, and nature, but with no reference either, on the one hand, to conformity to any ideal plan, or, on the other, to any community by descent. I have attempted to touch upon some of those questions in the morphology of plants which specially interest us at present. The want of finality in this unravelling of history without documents, the ample latitude for difference of opinion, according to the relative weight attached by one or another to the same facts, are difficulties inherent in the very nature of our study, while to many minds they increase rather than diminish its attractions. Nevertheless, the progress of morphology in late decades has plainly been towards a truer appreciation of how divers forms have originated, and so towards a better recognition of affinities.

On September 9 a paper read was one by Mr. W. S. P. Ellis on "A Method of Obtaining Material for Illustrating Smut in Barley."

Dr. D. H. Scott, F.R.S., next read a paper on "A New Medullosa from the Lower Coal-Measures of Lancashire."

Professor Marshall Ward read another paper on "Penicillium as a Wood-Destroying Fungus," in the course of which he said that spores from pure cultures of penicillium sown on sterilized blocks of Spruce-wood, cut in March, were found to grow freely and develop large crops of spores on normal condiphores. Sections of the infected wood showed that the hyphae of the mould entered the starch-bearing cells of the medullary rays of the sap-wood, and consumed the whole of the starch. The resin was untouched. In culture three months old the hyphae were to be seen deep in the substance of the wood passing from tracheide to

tracheide *vid* the bordered pits. Control sections, not infected and kept side by side with the above, contained abundance of starch, and no trace of hyphæ could be detected in them. The observation appeared of interest in several connexions. Penicillium was one of our commonest moulds, and undoubtedly played a part in the reduction of plant debris to soil constituents; how far it could itself initiate the destruction of true wood, or how far it merely followed on the ravages of other fungi, bacteria, &c., was unknown. There were strong grounds for believing that it destroyed the oak of casks, &c., but since these were impregnated with food materials that was not very surprising. It appeared as if penicillium might be a much more active organism in initiating and carrying on the destruction of wood than had hitherto been supposed, and that it was not merely a hanger-on or follower of more powerful wood-destroying fungi.

SOCIETIES.

THE SCOTTISH HORTICULTURAL ASSOCIATION.

SEPTEMBER 6.—The usual monthly meeting of this popular association [kept out owing to lack of space in our last issue. Ed.] was held on the above date in the society's room, 5, St. Andrew Square. There was a good attendance; Mr. M. TODD in the chair.

Mr. Todd contributed to the brightness of the meeting with a rich and varied collection of Asters, Gaillardias, and Coreopsis; Messrs. COCKER & SONS, Aberdeen, sent a very fine collection of Roses; Mr. MOYES, of Dalmeny Park, had a capital display of seedling Carnations; Mr. MUIR, Beel Gardens, Prestonkirk, sent some fine double-flowered seedling Begonias.

But while giving due credit to these floral contributions, it will be readily admitted that the chief attraction of this meeting lay in the fresh and thoughtful paper read by Mr. T. DALE, gr., Aikenhead House, Cathcart, on "The Cultivation of the Rose." He treated of the early history of the Rose, tracing its origin to China, and giving many interesting historical facts as to its cultivation in early times, its use in medicine, and as a food plant, qualities almost ignored or forgotten in these days. Mr. DALE was awarded a hearty vote of thanks for his paper.

LOUGHBOROUGH AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

SEPTEMBER 6.—With a view to encouraging the growth of the Dahlia and Gladiolus, the above Association held an exhibition in the Philharmonic Hall, Loughborough, on the above date.

Two groups of plants occupied the centre of the hall, W. B. PAGET, Esq., Southfield Park (gr., Mr. F. Reynolds), putting up an attractive group of Palms, Cannas, and foliage plants, edged with Ferns, Lycopodiums, &c.; and Messrs. J. SMITH & SON, Derby Road Nurseries, a group consisting of early-flowering Chrysanthemums. On the platform were arranged three groups of Palms, contributed by W. B. PAGET, Esq., and A. W. N. BURDER, Esq., The Elm.

This being the second attempt of the Association to obtain an exhibition of the various classes of Dahlias, the response by local growers was very encouraging. Messrs. SMITH & SON staged a very fine exhibit of Show, Pompon, and Cactus varieties. Mr. H. WEEKS, gr. to Lady BYRON, Thrumpton Hall, Derby, was very highly commended for his exhibit of Dahlia blooms, and the tasteful arrangement that it showed. Mr. JAMES WRIGHT, of Granby Street, Leicester, staged excellent Show, Cactus and Pompon in this class—very fresh and meritorious blooms.

For the best twelve Show blooms, Mr. H. HICKLING, of Bedford Street Nurseries, was awarded a Certificate for blooms of refined growth and good colour. Mr. JAMES WRIGHT took a Certificate for twelve Cactus varieties, with flowers of substance, breadth of petals, and good colour.

For the best twelve Pompons, in distinct varieties, three blooms of each, Messrs. SMITH & SON carried off a Certificate, with a nice collection, well staged.

For the best twelve spikes of Gladiolus, distinct varieties, Messrs. SMITH & SON again won a Certificate.

Mr. W. English, gr. to the Right Hon. Lord BELPER, Kingston Hall, contributed a collection of Pompon and Cactus Dahlias of great merit; Mr. WOODFIELD staging two dozen good Cactus varieties. Mr. HAMSHIRE, gr. to Mrs. PERRY HERRICK, Beau Manor Park, contributed cut blooms of herbaceous Phlox, zonal Pelargoniums, and Zinnias. Mr. J. SMITH, gr. to J. GRIGGS, Esq., staged a dozen plants of Trachelium coeruleum. An exhibit of Blackberries grown in pots, Phlox, and Asters, contributed by Mr. TETHERTON, added interest to the exhibition. Mr. H. HICKLING staged a fine display of cut flowers, consisting of Dahlias, Gladiolus, Asters, Pansies, and early-flowering Chrysanthemums.

THE ANNUAL MEETING.

The Secretary reported upon the essays sent in for competition as follows:—There were three papers sent in upon the cultivation of the Cineraria, and the 1st prize was awarded to Mr. T. CHAUNT, of Kingston Hall Gardens; 2nd Mr. GEO. HUCKLE, Kingston Gardens; and 3rd, Mr. F. T. MARSH, Loughborough. The Cyclamen prize was awarded to Mr. A. HAMSHIRE, Junr., Beau Manor Park Gardens,

his being the only *bond fide* paper sent in. The report and balance-sheet was read and adopted. The membership upon the books number seventy. The officers were re-elected: President, W. C. BURDER, Esq.; Chairman of Committee, Mr. A. HAMSHIRE; Hon. Treasurer, Mr. W. English; Hon. Sec., Mr. D. ROBERTS.

DERBY HORTICULTURAL.

SEPTEMBER 7, 8.—The thirty-seventh annual exhibition was held at Derby on the above dates, and was a great success. There were several fine groups of miscellaneous plants.

The 1st prize was won by Mr. Edmonds, gr. to the Duke of ST. ALBANS, who had a fine plant of Geonoma gracilis in the centre of his group, and around this were dotted tall plants of Acalypha Macafeana, Crotons in variety, Arundinaria falcata, Casuarina equisetifolia, Cocos, Dracenas, Sugar Cane, and Abutilons. Beneath these was an undergrowth of Caladiums, Selaginellas, Eulalias, and Ferns in variety, the whole being relieved by a few plants in flower of Cattleya, Dendrobium, Phalenopsis, Francoa ramosa, and Anthurium Andreanum. This was a group of fine plants, well arranged in regard to colour and general effect. Mr. WARD won the 2nd prize, with a group that contained some grand Crotons; Ixoras, too, were well flowered, and a number of other plants, consisting of Lilliums, Coleus, Dendrobiums, &c., were arranged in a natural style on mounds of moss. A few additional tall feathery plants would have brought out the effect of the Crotons to better advantage. Mr. MCINTYRE, Woodside Gardens, Darlington, was 3rd.

In the class for a decorated dessert-table, Mr. GOODACRE, Elvaston Castle Gardens, was well to the front, securing the 1st prize with a very tasteful arrangement. The centre contained three trumpet-shaped glasses, lightly filled with sprays of Odontoglossum crispum, Montbretia crocosmiflora, Eulalia japonica, draped with Selaginella caesia, the sprays of which were extended thinly over the cloth between the dishes of very fine Black Hamburg and Muscat of Alexandria Grapes, Golden Eagle and Lord Palmerston Peaches, Washington and Gasconne's Seedling Apples, a Queen Pine, with Plums, Figs, a Melon, Pears and Nectarines. Mr. EDMONDS was 2nd, with some fine dishes of fruit, set off with sprays of Smilax and Selaginella.

In the class for Black Grapes, Mr. CAMPBELL, gr., Mickelover Manor, was 1st, with three splendid bunches of Black Hamburg; Mr. DOE, gr., Rufford Abbey, 2nd, with large bunches of Barbarossa, perfect in colour. For White Grapes, Mr. CAMPBELL was again 1st, with Muscat of Alexandria, perfectly finished; 2nd, Mr. GOODACRE, with the same variety. Peaches brought a strong competition: Mr. READ, gr., Brethly, took 1st prize; Mr. WOODGATE, gr., Rolleston, 2nd. Apples also were numerous and fine, Mr. GOODACRE taking 1st prize in both classes.

The committee would do well by adding a few new classes to this portion of the schedule. It is not usual or proper to exhibit Black Hamburg Grapes against Barbarossa; and in the white Grape class the same kind of grievance requires remedy. Plums, Morello Cherries, and collections of fruit, also should be encouraged.

Dahlias were remarkably fine; Mr. CARRINGTON took the 1st prize. Messrs. Suttons' prizes for a collection of vegetables brought some excellent exhibits. Mr. T. SMITH, Elvaston, was placed 1st. In the single dishes of vegetables, Messrs. READ, SHAW, WOODGATE, NEWBOLD, and STIRLING, took the chief prizes with very fine exhibits.

YORKSHIRE FUNGUS FORAY.

SEPTEMBER 10 AND 12.—The members of the Mycological Section of the Yorkshire Naturalist Union met last week at Harewood, near Leeds, for a three days' investigation of the fungus flora of that district.

The Earl of Harewood had kindly given this section a two days' permission to search the extensive parks and woodlands of the Harewood estate. A considerable amount of success attended the work, although the dryness of the weather during the previous few weeks had not been favourable to the growth of the larger species. This being the case, it was decided to devote time and energy to the searching out of species of a microscopic character. Excellent results were eventually obtained. Altogether, over 300 species, great and small, were dealt with. This included many species of the smaller kinds, that have hitherto been recorded only by their first discoverers. On the last evening of the foray, the Rev. W. Fowler, M.A., Vicar of Liversedge, read a most interesting paper on "The popular aspect" of the subject. Included in it was much excellent advice and encouragement to students and others. He showed the vast importance of mycological study, not only from a purely scientific, but also from an economic point of view, pointing out the necessity and scope there was for investigating the enormous number of plant (both wild and cultivated) diseases due to the attacks of this comparatively little-known group. Mr. H. T. SEPPETT, of Halifax, gave great attention during the whole of the visit to this class of fungi. Chas. Crossland, Halifax, Hon. Sec.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

SEPTEMBER 7, 8.—The annual exhibition under the auspices of the Glasgow and West of Scotland Horticultural Society was opened on the 7th inst. in the St. Andrew's Hall. There were upwards of 1,300 entries, an increase of 300, or more, over those of last year. The quality of the exhibits generally was very good.

For the accommodation of the exhibiton the whole of the ground suite of halls was occupied, and, as far as possible, the exhibits were arranged in sections. In its general features the show presented an exceedingly pleasing and interesting scene, the disposition of the numerous and varied collections being carried out with a view to picturesque effect as well as to adequate display. In such hot weather as prevailed at the time, however, good tents would have been preferable, which would have afforded sufficient room to promenade. Suitable sites for such tents might easily be found in the neighbourhood of Glasgow; at the Botanical Gardens, for instance, where, under the management of the popular Curator, Mr. D. DEWAR, combined with the business capacity of Mr. John Coats, the Secretary, we think a most successful exhibition might be held. At any rate, the suggestion may be worth the consideration of the committee, and of Mr. Dewar. In the principal hall the larger plants, the competitions in decorative arrangements, and the fruit section were arranged; while other collections of distinctive classes found places in the Kent, Berkeley, and Octagon Halls. The most striking exhibit in the section open only to gardeners and amateurs, for tables of plants arranged for effect, was that by Mr. H. REID, gr. to Mr. W. CAMPBELL, Williamwood, Kennishead. This was one of the outstanding features of the show, and attracted general attention. The collection, which was awarded the Cup for the most meritorious exhibit in the show, was arranged on a large table, and consisted chiefly of Crotons, Dracenas, Orchids, Lilliums, and Celosias, set on a groundwork of Maidenhair Fern. There was a charming array of bouquets.

In a collection of Ferns, for which the 1st prize went to Mr. MILLER, gr. to A. RUSSELL, Esq., Auchendraith, was included an exceptionally fine Davallia. Mr. MILLER also carried off leading honours for two remarkably good Ericas in flower. For four exotic plants in bloom, distinct, Mr. LANDS- BURG, gr. to Mrs. MUIR, Beechwood, Bearsden, was 1st; and corresponding awards were made to Mr. J. GALLOWAY, gr. to Mrs. GILBERT, of Yorkhill, for Palms; to Mr. LANDS- BURG, for six table plants; and to Mr. JOHN SUTHERLAND, Victoria Nurseries, Lenzie, for twelve table plants. The success of Mr. SUTHERLAND in this department makes a record which is probably without parallel, this being the twentieth year in which he has carried off this important prize.

Fruit was excellent, and Grapes, especially so those shown by Mr. LUNT. We have seldom seen better fruit upon the whole than was exhibited here. In the competition for twelve dishes, of fruit, the winner was Mr. AIRDRIE, gr. to Mr. J. H. A. GRAHAM, Larbert House, with a magnificent assortment; and Mr. D. MURRAY, gr. to the Marquis of AILSA, Culzean Castle, Maybole, was 2nd. Mr. T. LUNT, gr. to Mr. A. STIRLING, Dunblane, was 1st for six dishes of fruit, and he also secured leading honours in the classes for two bunches of White Muscat Grapes, and that for four bunches of Grapes, the last made up of magnificent specimens of Muscat, Foster's Seedling, Alnwick Seedling, and Black Hamburg.

The best collection of six dishes of hardy fruits was from Mr. GEO. WATSON, Walkinshaw Gardens, Renfrew; 2nd, Mr. J. McMillan, gr. to J. W. HARVEY, Esq., Castle Semple, Lochwinnoch. The leading prize for two bunches of Black Hamburg Grapes went to Mr. D. BUCHANAN, gr. to Major HAMILTON. Mr. D. MURRAY, gr. to the Marquis of AILSA, was 1st for twelve baking Apples, and the leading prize for twelve Pears went to Mr. ANGUS, Dalzell, who was also 1st for Melons. For two bunches of Grapes, other than Black Hamburg, Mr. J. CAMERON, gr., Auchterarder House, was 1st.

Of cut flowers, Dahlias, Asters, Marigolds, and Pansies were very fine. Mr. CHARLES IRVINE, Jedburgh, whose specialties in Pentstemons are well known and greatly admired, had an artistic show, which also included Hollyhocks and Carnations. A fine lot of hardy herbaceous flowers was shown by Mr. M. CUTHBERTSON, Rothesay, the Gladiolus being especially fine. Mr. JOHN SMELLIE, Busby, had a fine lot of Cactus and Show Dahlias, including the newest varieties. Fancy Pansies were also a feature of his exhibit.

Herbaceous flowers were shown in great number and variety by Messrs. DOBBIE & CO., Rothesay, and their specialties in Cactus Dahlias were particularly good. Messrs. KERR BROTHERS, Dumfries, also showed Dahlias and herbaceous flowers. An attractive stand was that of Mr. JOHN FORBES, Hawick, whose Pentstemons, Phloxes, Hollyhocks, and Carnations have a high reputation.

Messrs. COCKER & SONS, Aberdeen, had a grand display of Roses, for which they carried off the 1st prize in the competitive section. Another very large and interesting show of Dahlias and Carnations was that of Mr. M. CAMPBELL, High Blantyre.

Messrs. A. LISTER & SONS, Rothesay, won in a competitive class for twenty-four Dahlia blooms. Mr. M. CAMPBELL took 1st prize for a collection of twenty-four Carnation blooms; and for twenty-four blooms of fancy Pansies Messrs. A. LISTER & SONS were the winners.

In the competitive classes in this section, Mr. MILLER, gr. to Mr. JAMES CAMPBELL, Tullichewan, was 1st for Sweet Peas. Mr. L. M'KINNON, Cardross, was 1st for Cactus Dahlias, his lot being superior in colour, form, and size, and including the newest and best varieties. The amateur section and the ladies' competitions were interesting features of the exhibition. Vegetables were shown in the Kent Hall, and were admirable both as regards variety and quality. The best collection of vegetables was one from Mr. JAS. BROWN, gr. to A. A. SPIERS, Esq., Houston; and Mr. CHAS. TRAIL, gr. to Mrs. BALLANTINE, Ashgrove, Kilwinning, was 2nd.

ISLE OF WIGHT HORTICULTURAL IMPROVEMENT ASSOCIATION.

SEPTEMBER 10.—The above Association had their last excursion of the season on Saturday last to Worth Park, Crawley, the residence of Mrs. Montefiore, and to the well-known neighbouring fruit nurseries of Messrs. Cheal & Sons.

The day was beautifully fine, and the sixty-four members who availed themselves of the excursion fully enjoyed the outing, and greatly appreciated the kindness of Mrs. Montefiore who provided some refreshments, and to Messrs. Cheal who provided a substantial tea. The party left Ryde Pier early in the morning, many having travelled from Ventnor and district and from Newport in brakes; whilst others utilised their bicycles to reach the starting point. The party were accompanied by their esteemed chairman (Dr. J. Groves, B.A., J.P.), and the honorary secretary, Mr. S. Heaton, F.R.H.S. The extensive gardens at Worth Park, under the able management of Mr. Allen, were a source of pleasure and profit. As to Lowfield Nurseries, the extent and the variety of the trees, &c., cultivated, absorbed the attention of the party for several hours. The party returned to the Island highly delighted, and the outing will be recognised as another red-letter day in the history of the association.

WELLINGBOROUGH AND MIDLAND COUNTIES DAHLIA.

SEPTEMBER 9, 10.—This Society, which has just held its third annual exhibition, appears likely to make the Dahlia become a highly popular flower in the Midland Counties.

The working-men of Wellingborough and district are taking up the cultivation of the Dahlia with spirit, and there is a most satisfactory growth in the number of cultivators and of exhibitors. The spacious Corn Exchange was almost filled with Dahlia blooms on the above dates, and the quality of the exhibits was high. The prizes in the classes open to all comers were good enough to tempt several of the trade growers in the south to enter, and they took to Wellingborough some of their finest blooms.

The open class for twenty-four Show Dahlias brought seven entries, Mr. JOHN WALKER, nurseryman, Thame, taking the 1st prize with finely-developed blooms; chief among them were Mrs. Every, John Hickling, Mrs. J. Downie, Buffalo Bill, William Powell, James Cocker, Harry Turner, John Walker, Duke of Fife, Perfection, &c. Mr. S. MORTIMER, Swiss Nursery, Farnham, was 2nd. There were nine entries for twelve blooms, and here again Mr. J. WALKER was placed 1st, with fine flowers; and Mr. S. MORTIMER 2nd.

There was a class for twenty-four blooms of Cactus Dahlias, distinct, shown in the same manner as the Show Dahlias. This brought six entries, and all were remarkably good. Messrs. KEYNES, WILLIAMS & Co., who had blooms of extra fine quality, were placed 1st; chief among them were Britannia, Stella, Exquisite, Daffodil, Mrs. J. Goddard, Harmony, Ethel, Progenitor, Laverstock Beauty, Wallace. The Clown, Starfish, Countess of Lonsdale, &c., several of the foregoing being fine novelties of the present year. Messrs. J. BURRELL & Co., Howe End Nurseries, Cambridge, were a close 2nd, their collection consisting largely of novelties of their own raising; a few of the leading blooms were Lucius, Island Queen, Britannia, Keynes' White, which though not faultless, appears to top all the other whites; Debonair, Ajax, Mimosa, &c. Messrs. KEYNES & Co. also had the best twelve blooms similarly shown, staging similar varieties to as those in the foregoing class; Mr. GEO. HUMPHRIES, Kingston Langley, Chippenham, was 2nd.

Then followed a class for twelve bunches of Cactus Dahlias, three blooms to form a bunch; Messrs. KEYNES & Co. taking the 1st prize with very fine fresh blooms of Radiance, Britannia, Wallace, Progenitor, Countess of Sherbrooke, Countess of Lonsdale, The Clown, Starfish, &c.; Messrs. J. BURRELL & Co., were a close 2nd. There were six entries in this class.

Five competed in the class for twelve blooms of Pompon Dahlias, Messrs. J. BURRELL being 1st with fresh bright bunches of medium-sized, even flowers of Arthur West, George Brinkman, Tommy Keith, Rosebud, Douglas, Phoebe, Bacchus, E. F. Jungker, &c. 2nd, Messrs. KEYNES & Co., also with excellent bunches.

There were certain open classes from which nurserymen were excluded. There were six entries of twelve cut blooms; Mr. F. MIDDLETON, Althorp, taking the 1st prize with very good blooms indeed; and Mr. R. BURGIN was 2nd. In the class for six blooms there were seven competitors, and Mr. BURGIN was 1st, and Mr. MIDDLETON 2nd. Mr. MIDDLETON had the best twelve blooms of Cactus varieties, showing remarkably good examples of Island Queen, Britannia, Earl of Pembroke, Standard Bearer, Starfish, Arachne, Night, &c.; 2nd—and a very close 2nd, too—Mr. H. A. NEEDS, Horsell, Woking. Mr. MIDDLETON also had the best six; Mr. W. E. PRENTICE, Wellingborough, was 2nd. Mr. H. A. NEEDS was 1st with six bunches of Cactus Dahlias, three blooms in a bunch; and Mr. R. BURGIN was 2nd. There was a class also for six bunches of Poppies; and special prizes, offered by Mr. RICHARD DEAN and Mr. G. HUMPHRIES, brought good competitions.

There were several exhibits of fruits and vegetables.

As a number of new Dahlias were submitted for Certificates, the whole of the growers present with the judges, formed a committee, with the result that the following Certificates of Merit were awarded:—To Cactus Dahlias Wallace, Progenitor, The Clown, Viscountess Sherbrooke, Radiance, and Countess of Lonsdale, from Messrs. KEYNES & Co.; to Cactus Dahlia Magnificent, from Mr. J. STRUDWICK, St.

Leonard's-on-Sea; to Cactus Lucius and Antelope; and also to Pompon The Duke, from Messrs. J. BURRELL & Co.; and to Show Dahlia David Johnson, and to Cactus Ranji, from Mr. GEO. HUMPHRIES.

ROYAL CALEDONIAN HORTICULTURAL.

SEPTEMBER 14, 15.—This year's autumn exhibition held, as usual, in the Waverley Market, was undoubtedly one of the best held in Edinburgh during late years.

The prize for a table laid out as for dessert, with sixteen dishes of fruit, and decorated with flowers and foliage, was perhaps the exhibit that attracted most attention. Mr. CAIRNS, Balruddery Gardens, Dundee, and Mr. KIRK, Norwood House Gardens, Alloa, were the only exhibitors, the former being 1st, with good fruit and beautiful flowers, nearly all Orchids, but which, with advantage, might have been somewhat more lightly arranged. Mr. KIRK's exhibit was, in this respect, heavier still, though his fruits were, as a whole, better.

Mr. CAIRNS' collection of ten dishes of fruit, included some good first-class specimens, his Grapes, Pineapple and Apples being most noteworthy. Mr. BESANT's orchard fruit was excellent, and some of the dishes fine.

GRAPES.

Amongst the Grapes, Mr. LUNT's collection of six sorts, comprising three bunches Muscat of Alexandria, two of Black Hamburg and one of Alnwick seedling, were very fine indeed.

The collection of four varieties were all black, and these were all less generally good than in the sixes.

In the one bunch classes the fruit was rather wanting in size and finish; there were several good examples of Muscat of Alexandria, and of Black Hamburg, and Alicante, but Gros Colman and Lady Downes were of high merit.

HARDY FRUITS.

Hardy fruits, for which there were numerous classes, mostly in single dishes were generally small and deficient in colour. Pears were also below the usual standard. On the other hand, many dishes of Plums were fine, and of these there was a large exhibit. Peaches were excellent, as also Nectarines. Hardy fruits from Mr. DAY, Galloway House Gardens, Garliestown, were most commendable for the present season.

PLANTS.

In the plant classes Mr. LUNT exhibited some of the finest in the show, being in particular strong in Crotons. Flowering plants were in general small, but the Orchids though not numerous shown included some good plants. There was a very large number of plants shown, such as Fuchsias, Coleus, Chrysanthemums, Vallotas, and some grand Ferns. Quantities of Palms; great numbers of table plants, &c., were lovely.

A table of plants, circular in form, and arranged for effect, brought three exhibitors, all of whose collections seemed to be wanting in lightness of touch.

CUT FLOWERS.

Among cut flowers were some lovely Roses, perhaps smaller than usual, but in brightness of colour leaving nothing to be desired. Sweet Peas, Dahlias, and other autumn flowers were also numerous. In general these were not quite so good as usual. Herbaceous plants, however, must not be included in the preceding remark, as they were extra fine.

NURSERYMEN'S AND MISCELLANEOUS CLASSES.

Of the classes set apart for nurserymen, the one for tables of cut herbaceous flowers, formed a grand exhibit. Both Messrs. COCKER & SON, Aberdeen, and Messrs. HARKNESS & SON, Bedale, York, put up very fine lots of the more popular autumn flowers.

Trade growers and others set up beautiful displays of fruit and flowers.

From HER MAJESTY'S Gardens at Windsor, a very large table was set up by Mr. OWEN THOMAS, which contained a large number of Apples not quite of the largest size; Pears were better than the Apples, and many Melons, including British Queen, in five fine fruits. A large number of dishes of Peaches, Nectarines, and Plums, Bananas and Grapes, with a good Pine-apple as a centre-piece, completed the sides. Mulberries, Strawberries, Morello Cherries, John Downie Crab, and dessert Tomato with Royal Sovereign Melons completed the ends. A number of Nepenthes were raised high above the fruits, and a few vases of cut flowers and foliage. An edging of dried Statice completed the arrangement.

Messrs. J. VEITCH & Sons, Ltd., King's Road, Chelsea, London, had a group of fine foliaged and other plants, arranged in circular form on the floor. The plants included Crotons, Nepenthes, Caladiums, a few Orchids, Javanese Rhododendrons, &c.

Messrs. METHVEN & Sons had a nicely arranged table, as had also Messrs. LAIRD & SON, both of Edinburgh.

Messrs. DICKSONS & Co., Edinburgh, set up a collection of plants of a miscellaneous character; Grapes in pots, with Sweet Peas, Violas, Carnations, &c.

From Messrs. WALLACE & Co., Colchester, came a fine collection of autumn or flowering Lilies.

Hardy herbaceous and other cut flowers were shown in amazing quantities by nurserymen, including some from Mr. M. CAMPBELL, Blantyre, who put up some good Carnations and Dahlias of fine quality.

Mr. JOHN FORBES, Hawick, whose table was rich in Hollyhocks, had a large number of good Carnations, many Pentstemons, &c.

Messrs. DOBBIE & Co., Rothesay, put their dependence for effect mainly on Dahlias, of which the Cactus forms were very beautiful. In that of Messrs. COCKER & SON's, Aberdeen, were some glorious bunches of the best hardy herbaceous flowers.

Mr. H. J. JONES, Ryecroft Nursery, Lewisham, London, set up a group of plants on the floor of the building, boldly arranged in low groups, and filled in with lovely Ferns, Begonias, Caladiums, &c.

Messrs. D. & W. BUCHANAN, Kippen, exhibited a table of beautiful Grapes, and several varieties of Tomatoes, interspersed with a few tall trumpet vases, furnished with prepared Vine-leaves, Ferns, and Rowan berries. This was a highly meritorious exhibit.

Messrs. THOMSON & Sons, Clovenfords, showed some of their fine Grapes and Tomatoes, and also a table of plants.

THE ROSARY.

ORANGE-FUNGUS ON ROSES.

THE Rose-grower has ever need to bear in mind the well-known proverb, "Never holla until you are out of the wood;" thus I had hardly written the statement that I had not been troubled with this pest, when a violent attack of it, consequent, I suppose, on the long-continued drought, attacked my plants, and the leaves of my hybrid perpetuals are so badly affected that in a couple of days a large quantity of them have fallen from the bushes, and their aspect sets one thinking as to the cause and history of this pest. On turning back to one's book of reference there is no one whose authority on the Rose is greater than the late Mr. Thomas Rivers, and he writes of it thus: "There is yet another red, or rather orange-coloured, fungus, peculiar to dry soils, which often makes its appearance in August on the under surface of the leaves of Roses, more particularly those of the Moss and Provence Roses. I have seen thousands of young and old plants of these two old favourite sorts with the under surface of every leaf covered with a thick coat of impalpable bright orange-coloured dust. No cure has yet been found for this disease; all the fungus remedies have failed. There is a preventive—the Roses should be lifted and replanted every autumn, giving them at the same time plenty of manure, and stirring the soil three feet deep; rotation in cropping should also be attended to, so as to give the Roses a bed in the Rose-garden which has had a crop of annuals the preceding summer." Now in this statement it will be observed that the writer lays a stress upon the fact that it is more frequent in dry soils. I hardly think that later experience has altered this conclusion, and it certainly does appear that the attack is more virulent in droughty than in damp seasons; and I think that probably had the beneficial rain that we had on August 7 and 8, come a few days before, the attack would not have been so violent as it is. I have never been able to observe that it did any lasting injuries to the plants; it disfigures them for a time by leaving them so bare of foliage, but that is all, so far as I can see. Of course, it may be said "but how much better your plants would have been had they not been attacked by it," but to this we can give no reply. As to Mr. Rivers' remedies, I very much question whether any of them would be of any avail. But there is one point in connection with this fungus that seems to me very curious, and which I should be glad if any of the *quid nuncs* can account for, and it is this, that it never seems to attack the Tea Roses. I speak of my own experience; but I have asked several Rose-growing friends, and their experience agrees with mine. I have gone carefully through what Roses I have, and find that my experience of former years is that of the present. I find a large quantity of it on my hybrid perpetuals, some being more infected by it than others; while on my Teas, planted close by, I can see no trace of it. I find very little of it amongst the hybrid Teas, and the nearer the varieties approach the Teas, as in Kaiserin Augusta Victoria, I find it entirely absent; in the same way I find that mildew does not affect the Teas and hybrid Teas as badly as it does H.P.'s. I should add, that my soil is light, and the situation warm. I have tried in turn various chemical preparations with which I have syringed the plants, but I have

never found them of any use. I am very dubious about the lifting of the plants, for I notice that newly-planted H.P.'s are as subject to it as the older plants. It is, therefore, one of those annoyances which I suppose we must put up with; but if any of my brother rosarians can suggest a preventive for this disease, or say how to get rid of it when it does appear, I think they will confer a favour on Rose-growers by letting it be known. *Wild Rose.*



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	TEMPERATURE.						RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.						No. of Rainy Days since Jan. 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
	Above (+) or below (—) the Mean for the week ending September 10.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 2, 1898.	Below 42°, difference from Mean since January 2, 1898.	(More +) or less (—) than Mean for the Week.				
0	8 +	133	0	+ 223	- 228	4 -	177	37.8	50	29
1	10 +	153	0	+ 169	- 222	4 -	134	17.1	45	32
2	8 +	154	0	+ 212	- 216	4 -	119	13.3	38	31
3	9 +	174	0	+ 151	- 207	5 -	106	12.8	64	36
4	10 +	174	0	+ 157	- 215	6 -	107	12.8	59	35
5	10 +	189	0	+ 216	- 243	6 -	97	11.6	71	38
6	8 +	144	0	+ 220	- 217	7 -	154	27.1	33	35
7	8 +	159	0	+ 227	- 244	6 -	130	22.5	41	36
8	7 +	161	0	+ 244	- 156	8 -	115	18.9	62	42
9	8 +	146	0	+ 208	- 168	1 +	164	23.6	55	31
10	6 +	148	0	+ 305	- 134	6 +	128	23.9	54	35
*	8 +	179	0	+ 396	- 93	6 -	130	14.7	70	49

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending September 10, is furnished from the Meteorological Office:—

"The weather was very fine in all parts of the kingdom during the earlier half of the period, and this condition continued to prevail over England throughout the week. In Ireland, Scotland, and the north of Wales, however, the later days were unsettled and rainy. A brilliant display of aurora was observed on Friday night in nearly all parts of the country, and again at a few stations on Saturday night.

"The temperature was unusually high for the time of year, the average for the week having been as much as 10° above the mean in 'England, S.,' the 'Midland Counties,' and 'Scotland, E.,' 9° in 'England, E.,' and 8° in nearly all other districts. The highest of the maxima occurred early in the week over Ireland and Scotland, but on the 8th over England. They varied from 92° in 'England, E.,' 91° in 'England, S.,' and 90° in the 'Midland Counties,' to 81° in 'Scotland, W.' and 'England, N.W.,' and to 80° in 'Ireland, S.' These values are higher than any registered in September—over Scotland since 1871, and over England since 1868. The lowest of the minima, which were recorded on very irregular dates, ranged from 42° in 'Scotland, N.,' to 54° in 'England, S.,' and to 57° in the 'Channel Islands.' During the greater part of the week the minimum readings were very high in all districts, the thermometer at many stations not falling to 60°.

"The rainfall was much more than the mean in 'Ireland, S.,' and slightly exceeded the normal in 'Ireland, N.,' in all other districts, however, it was less, and over the greater part of England rain was entirely absent.

"The bright sunshine exceeded the mean in all districts, the excess in almost all cases being large. The percentage of the possible duration ranged from 71 in 'England, S.,' and 70 in the 'Channel Islands,' to 41 in 'England, N.W.,' and 38 in 'England, N.E.' and 'Scotland, W.'"

MARKETS.

COVENT GARDEN, SEPTEMBER 15.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms	3 0-4 0	Mignonette, per 12	2 0-4 0
Carnations, pr. doz.	1 0-3 0	Orchids:—	
Chrysanthemums, white, 12 blooms	1 0-3 0	Cattleya, 12 bms.	5 0-8 0
Chrysanthemums, yellow, 12 blooms	1 0-3 0	Odontoglossum	
Eucharis, per dozen	2 0-3 0	crispum, 12 bms.	2 0-4 0
Gardenias, per doz.	1 6-2 0	Pelargoniums, scar-	
Gladioli, white, doz.	0 8-1 0	let, per 12 bun.	3 0-5 0
Lilium Harris, per dozen blooms	8 0-4 0	— per 12 sprays...	0 4-0 6
Lily of the Valley, dozen sprays	0 9-1 6	Roses, Tea, per doz.	0 6-1 0
Maidenhair Fern, per 12 bunches	4 0-8 0	— yellow (Pearls), per dozen	1 0-2 0
		— pink, per dozen	1 6-2 0
		— Safrano, p. doz.	1 0-2 0
		— red, per dozen	0 6-1 0
		Stephanotis, doz.	1 0-1 6
		Tuberose, 12 blms.	1 0-1 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	4 0-12 0	Foliage plants, per dozen	12 0-36 0
Aspidistras, p. doz.	12 0-30 0	Heliotropes, p. doz.	4 0-6 0
— specimen, each	5 0-15 0	Liliums, various, per dozen	12 0-30 0
Coleus, per doz.	3 0-4 0	Marguerites, p. doz.	6 0-12 0
Dracenas, each	1 0-7 6	Mignonette, p. doz.	4 0-6 0
— various, p. doz.	12 0-24 0	Palms, various, ea.	2 0-10 0
Evergreen shrubs, in variety, p. doz.	6 0-24 0	— specimens, ea.	10 6-84 0
Ferns, small, per dozen	1 0-2 0	Pelargoniums, doz.	9 0-12 0
— various, p. doz.	5 0-12 0	Scarlets, per doz.	3 0-6 0
Ficus elastica, each	1 0-7 6		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	1 6-2 0	Mint, per dozen bunches	2 0-3 0
Beans, Eng., Dwarf, per sieve	2 0-3 0	Mushrooms, house, per lb.	1 0-1 3
— Runners, in bus.	3 0-5 0	Onions, Dutch, bag	3 0—
Beetroots, new, per dozen bunches	2 0-3 0	— green, per doz. bunches	1 6—
— p. tally of 60	2 6-3 0	— Valencia and Oporto, cases...	5 0—
Cabbage, open, doz.	1 0-1 6	— Picklers, in bags	2 0-2 6
— open, p. tally...	4 0-7 0	— in sieve	1 6-2 0
Cauliflowers, English, per dozen	1 6-2 0	Parsley, per dozen	1 0-2 0
— per tally	4 0-8 0	— sieve	1 0—
Cress, doz. punnets	1 6—	Potatoes, Bedford and Lincolns	60 0-90 0
Carrots, New, bunches, per dozen	1 6—	Radishes, Round, breakfast, per dozen bunches (home grown)	1 3—
— washed, in bags	3 6—	Salad, small, punnets, per dozen	1 3—
— Surrey...	2 6-3 0	Shallots, good, per cwt.	10 0—
Celery, new, bundle	1 6—	Spinach, per sieve	1 6-2 0
Cucumbers, p. doz.	1 3-3 6	Tomatoes, English, per lb.	0 3-0 4
Endive, E. glith, p. score	1 6-2 0	— Belgian, cases, good	1 6-1 9
— French, per dozen	1 6—	— Channel Isles, per lb.	0 2½-0 3
— Batavian, score	1 6-2 0	Turnips, new Eng., per dozen	2 6-3 0
Garlic, Eng., per lb.	0 2—	— in bags, good...	2 6-3 0
Horseradish, New English, bundle	2 0-2 6	Watercress, p. doz. bunches	0 3-0 6
— foreign...	1 6—		
Leeks, new, dozen bunches	1 6—		
Lettuce, Cos, per doz.	2 0-3 0		
— Cabbage, doz.	1 6—		
Marrows, Vegetable, per dozen	1 6-3 0		
— per pot	5 0—		

POTATOS.

60s. to 90s. per ton. John Bath, 32 and 34, Wellington Street, Covent Garden.

REMARKS.—On Friday last there was in the market a quantity of Blackberries in butter-tubs from Ireland, and they realised 10s. per cwt. There has also been a good supply of Runner Beans in bushel-bags from Worcestershire, and of Cabbages from Yorkshire and Lancashire. There is a good supply of Apples, but really good samples are few. The Californian Plums, quoted Pond Seedlings, are described as Gross Prunes. An amber-coloured Plum is called Japan; it is very like Coe's Golden Drop, but rather broader at the base, and has little of the mottle-colouring.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Keswick, bush.	3 0-4 6	Oranges, Califor-	16 0—
— Suffield, bush.	4 0-5 0	— Italian, do.	15 0-16 0
— Duchess Favourite, sieve...	4 0-5 0	Peaches, per doz. (according to size)	6 0-10 0
— Worcester Pearmain, per sieve	4 6—	— Second quality	2 0-4 0
— Manx Codling, per bushel	4 6—	— Californian cases, about 7 dozen	5 0—
— Ingestres, sieve	3 6-5 0	Pears, Eng., Hazels, sieve	3 0-4 0
— Various, cookers, per bushel	2 6-5 0	— Williams, do.	3 0-4 0
Bananas, bunch	7 0-12 0	— foreign, Williams, in case, 36 3/8, 48	3 0—
Blackberries, pecks	2 0—	— in crates, 96	12 0—
— sieves	3 0—	— 108	11 0—
Cobnuts, per 100 lb.	45 0-50 0	— 150	8 0—
Damsons, sieve	3 6—	— Californian, Beurre Hardy, in half cases	6 6-8 0
Figs, per dozen	1 0-1 6	— Duchess, do.	7 6—
Filberts, per 100 lb.	30 0—	Pines, St. Michael	4 0-7 0
Grapes, English, Alicante	1 0-1 6	Plums, Bush, per sieve	2 0-2 6
— Hamburgh, lb.	0 9-1 8	— Diamonds	2 6-4 0
— second quality	0 6-0 9	— Goliaths	3 0-4 0
— Channel Isles, per lb.	0 6-0 9	— Pond's Seedling	3 0-4 0
— Muscats, per lb.	2 0-3 0	— Victorias	3 6—
Grapes, Muscats, second quality	1 0-1 6	— Californian, Pond's Seedling, cases	4 0—
Greengages, Eng., per sieve	3 0-4 0	— Japan, cases	8 0—
Melons, each	1 0-2 0	— Various others	2 0-2 6
Nectarines, doz.	0 10-12 0	Walnuts, Dutch	4 0—
— second quality	3 0-6 0	Prickles	4 0—
Oranges, Australian, cases	9 0-12 6		

SEEDS.

LONDON: Sept. 14.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that orders for Trifolium become daily scarcer and smaller. A few English growers who delayed marketing their seed will now have to carry same over for another season. New winter Tares offer freely, and at tempting rates; whilst Rye continues in short supply, and tends upwards in value. Full prices are asked for Mustard and Rape seed. As regards blue Peas and Haricot Beans, holders, relying on the approaching scarcity of green vegetables, show a bold front. The trade for bird seeds presents no fresh feature. The Board of Trade Returns give the imports of Clover and grass seeds into the United Kingdom for the eight months of this year, ending August 31, as 232,652 cwt., value £451,918; as against 185,482 cwt., value £376,844, for the corresponding period of 1897.

CORN.

AVERAGE PRICES OF British Corn (per imperial qr.), for the week ending September 10, and for the corresponding period of 1897, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1897.	1898.	Difference.
	s. d.	s. d.	s. d.
Wheat	33 1	26 10	— 6 3
Barley	27 4	27 0	— 0 4
Oats	17 3	17 10	+ 0 7

FRUIT AND VEGETABLES.

GLASGOW: Sept. 14.—The following are the averages of the prices recorded since our last report:—Grapes, English, 1s. 3d. to 1s. 6d. per lb.; do., Muscats, 1s. 6d. to 2s. 6d. ditto; do., Scotch, 1s. 3d. to 1s. 6d. ditto; do., Guernsey, 5d. to 7d. ditto; Apples, Americans, 18s. to 20s. per barrel; do., Canadian, 16s. to 20s. ditto; do., English, 14s. to 20s. per cwt.; Plums, Pershore, 8s. to 9s. ditto; ditto, Victoria (middle size), 2½d. per lb.; do., Cambridge-shire and Kent, 14s. to 20s. per cwt.; Greengages, 3d. to 4d. per lb.; Tomatoes, Scotch, 5d. to 8d.; do., English, 3d. to 4d.; do., Guernsey, 3d. do.; Lemons, Naples, 16s. to 25s. per case; Melons, home, 2s. to 2s. 6d. each; do., Valencia, 4s. 9d. to 5s. 9d. per case; Pears, Duchesse, 2s. 6d. per case; do., Havre Williams, 3s. to 4s. 6d. per case; do. Wine, 3s. per moly; Cabbages, 7d. to 10d. per dozen; Cauliflowers, 2s. 6d. do.; Mint, green, 6d. to 9d. per bunch; Onions, 4s. 6d. to 6s. 6d. per cwt.; do., Valencia, 3s. 6d. to 5s. 6d. per case; Parsley, 1s. to 1s. 6d. per stone; Potatoes (best), 1s. do.; Cucumbers, 2s. to 3s. 6d. per dozen; Lettuces, 6d. to 9d. do.; do., Cos, 6d. to 1s. do.; Radishes, 1s. per dozen bunches; Horseradish, 1s. 6d. per bundle; Mushrooms, 1s. to 1s. 2d. per lb.; Beetroots, 7d. to 8d. per doz.; Mustard and Cress, 3d. per punnet; Spinach, 1s. 6d. to 2s. per stone; Turnips, white, 2d. to 3d. per bunch; Celery, Scotch, 1s. 6d. per bundle; Onions, Valencia, 3s. to 3s. 6d. per case.

LIVERPOOL: September 14.—Average of the prices at under-noted markets:—St. John's: Potatoes, 10d. to 1s. per peck; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 4d. to 8d. do.; Pine-apples, English, 4s. to 5s. each; Damsons, 6d. per lb.; Cob-nuts, 8d. per lb.; Cucumbers, 3d. to 4d. each; Mushrooms, 8d. per lb.; do., 8s. per

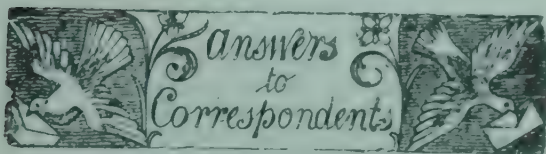
basket. Wholesale Vegetable Market: Potatoes, per cwt., Giants, 1s. 9d. to 2s. 8d.; Main Crop, 2s. 6d. to 3s.; Bruce, 2s. to 2s. 4d.; Kidneys, 2s. 6d. to 3s. 3d.; Turnips, 6d. to 8d. per dozen bunches; Carrots, 6d. to 9d. per dozen bunches; Parsley, 4d. to 6d. do.; Onions, English, 7s. per cwt.; do., foreign, 2s. 9d. to 3s. 6d. do.; Cucumbers, 1s. to 2s. 6d. per doz.; Cauliflowers, 1s. to 1s. 8d. do.; Cabbages, 6d. to 10d. do.; Celery, 1s. to 2s. 3d. per roll.

GARDENING APPOINTMENTS.

- Mr. Wm. MEADS, late Head Gardener at Buscot Park Farm, Faringdon, Berks, has been appointed Head Gardener and Bailiff to Sir G. W. ALLEN, Free Chase, Hayward's Heath.
- Mr. A. VINCE, late of Morant's Court, Sevenoaks, as Head Gardener and Bailiff to Lt.-Col. DANSEY, Cams Hall, Fareham, Hants.
- Mr. GEORGE BURROWS, late of Berwick House, Shrewsbury, as Head Gardener and Bailiff to G. E. BELLIS, Esq., The Dell, King's Norton, near Birmingham.
- Mr. FRED LODGE, as Gardener to J. S. BERGHEIM, Esq., Belsize Court, Hampstead, N.W.
- Mr. THOS. WALCROFT, Gardener to the late JAMES STIFF, Esq., as Gardener to V. B. TRITTON, Esq., Norfolk Lodge, Barnet, Herts.
- Mr. A. B. WADDS, for the past five years Gardener to W. W. ASTOR, Esq., Cliveden, Maidenhead, as Gardener to Sir WETMAN D. PEARSON, Bart., M.P., Paddockhurst, Worth, Sussex.
- Mr. W. H. KEEN, until recently at Warley Place Gardens, Brontwood, as Gardener to Colonel TUFNELL TYRELL, Boreham House, Chelmsford.

CATALOGUES RECEIVED.

- M. BRUANT, Poitiers, Vienne, France—Bulbs, Seeds, &c., required in the autumn; Chrysanthemums.
- ARMITAGE BROS., Nottingham—Bulb, Roses, Carnations, Hardy Plants, &c.
- W. PAUL & SON, Waltham Cross, Herts—Roses.
- CHR. LORENZ, Erfurt, Germany—Vegetable and Flower Seeds.
- B. S. WILLIAMS & SON, 169, Piccadilly, W., and Upper Holloway, London, N.—Florists' Specialties.
- H. DUNCAN CARR, 22, Kimberley Road, Stockwell, London, S.W.—Bulbs, Roses, Chrysanthemums, &c.
- H. CANNELL & SONS, Swanley Kent—Bulbs, Strawberries, and small Fruit Trees.
- HOWDEN & CO., Inverness—Bulbs, &c.
- THOS. KENNEDY & CO., 126 & 128, High Street, Dumfries.—Bulbs.
- ARTHUR ROBINSON, 1A, Bishopsgate Without, City—Bulbs.
- A. DESSERT, Chenonceaux, France—Peonies.



A SICK CATALPA-TREE: *E. H. W.* The tree may be rejuvenated if it be not too far gone by digging a trench round it at the extremities of the roots, tracing the latter back towards the stem for a yard or two, and laying them in new soil, consisting of heavy loam, two-thirds; decayed manure, one-third; and mortar-rubble sufficient to effect good drainage, making it firm before and after laying-out the roots. The surface-soil should also be removed, replacing it with a similar mixture of soil, and over all a mulch of leaf-mould or decayed hot-bed manure should be laid. Probably, a copious application of water may be necessary, the soil being in a very dry condition. Manure-water once or twice during the winter would benefit the tree.

ADVANCEMENT IN HORTICULTURE: *D. Macgregor.* We think that you should endeavour to obtain employment, say, first in the Royal Botanic Gardens, Edinburgh or Dublin, and then at Kew; or, if you would like foreign experience, you might go to the Jardin des Plantes in Paris, or the Botanic Gardens at Berlin or Vienna. To obtain admission to these gardens is not very difficult, provided your testimonials are good.

ALPINE GARDEN: *E. H. W.* If the work can be undertaken forthwith, there is so much heat in the earth that transplanted things would become established before the advent of winter. Otherwise make preparations in the winter, and defer all planting till March and April.

CATERPILLAR: *W. Pease.* The larvæ of the Privet Hawkmoth, *Sphinx ligustri*.

CHRYSANTHEMUM LEAVES WITH FUNGUS: *H. F. C. Q. and B. W.* We are continually receiving specimens of Chrysanthemum leaves attacked similarly to yours. The disfiguration is caused by a "rust" fungus, which was fully described in *Gardeners' Chronicle* for October 9, 1897, p. 256. As you have 250 plants

so attacked, it will be best to remove the affected leaves from same, and burn them. If the few plants first attacked had been burned, probably the fungus would have failed to spread. It might be useful to syringe all the plants with Condry's fluid or a copper solution, especially wetting the underneath side of the foliage. Until the last year or two this pest very rarely attacked Chrysanthem plants, but it is unfortunately becoming very common and destructive.

CODIÆUM (CROTON) LEAVES DISFIGURED: *T. C. M.* The specimens you send are insufficient to form an absolute conclusion upon. There does not appear, however, to be any disease upon them, and the disfiguration by spotting, &c., would appear to be due to some detail in their cultivation, and this view is strengthened by the weakly appearance of the leaves. Try a fresh stock of plants or strong cuttings, and grow them liberally, without an excessive use of manure, and you will probably find that they may be kept free from such defects. See that the glass of the house in which they are cultivated contains no flaws that will concentrate the rays of the sun, and thus burn the plants.

CRATEGUS FOR NAME: *G. P.* We have unfortunately no record of the two specimens.

DONATION.—Received for the Royal Gardeners' Orphan Fund, the sum of 2s., with thanks, from J. Shaw, and a similar sum from F. Williams, Cliveden, for the Gardeners' Royal Benevolent Institution.

EARLY SINGLE-FLOWERED BEDDING TULIPS, ROSE OR PINK SELF-COLOURED: *E. H. W.* Rose Applati, very large and handsome; and Rose Luisante, fine deep rose. Double early-flowering Couronne des Roses, shaded rose, very fine; and Rosene, rosy-pink, a good bedder.

EULALIA JAPONICA VARIEGATA COMING GREEN FROM SEED: *D. P.* A common occurrence. It is a reversion to the original colour of the plant. Try the effect of planting in poor soil.

EXHIBITING HARDY ANNUALS: *Constant Reader.* The wording of the schedule being as stated, the decision in the case was necessarily thrown upon the judges. There may be something in your contention that if seeds of Asters, Phlox Drummondii, Zinnia elegans, and Ten-week Stocks be sown in spring out-of-doors, and exhibition blooms be produced by them, without being afforded protection at any stage of their growth, they are hardy. But it is only at a certain period of the year; they will not stand frost. Seeds cannot be sown in autumn with a view to obtaining spring flowering plants. The hardy annuals, if left to themselves, will reproduce themselves naturally by seed. Will Zinnia elegans and Phlox Drummondii succeed in these conditions? We think not, and therefore they are "tender" annuals rather than perfectly hardy plants. The judges could hardly have done other than disqualify you under the circumstances you describe.

FUNGUS: *G. Paul.* Young immature specimens of Polyporus ovinus. *M. C. G.*

IMPORTED FRUIT: *S. W.* The last returns are obtainable from Messrs. Pyre & Spottiswoode, Queen's Printers, East Harding Street, London, E.C. Further information might also be obtained from the Board of Trade, Whitehall Gardens.

INSECTS: *D. Ireland.* The caterpillar on Peas is that of the Cabbage Noctua moth (*Mamestra brassicae*), not to be confounded with the Cabbage-butterflies. It will feed on almost anything. *R. McL.*

LEAVES BROWNED IN PARTS: *K. S.* No fungus was discovered on the leaves, and the appearances seem to be due to scalding or burning by solar heat.

LILIUM AURATUM: *Frank Dicks & Co.* The plant was introduced from Japan by the late J. G. Veitch in 1862 (see *Gardeners' Chronicle* for July 12, 1862, p. 644). A flowering plant was shown by Messrs. Veitch at a meeting of the Royal Horticultural Society held in the then new conservatory at South Kensington on July 2 the same year. It was found growing wild on the hill-sides of the midland provinces of Japan.

NAMES OF FRUITS: *A. B.* 1, Royal Codlin Apple; 2, Warner's King Apple.—*H. E. G.* Beurré Giffard.—*H. Oakley.* Cox's Pomona.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*H. E. G.* Helianthemum polifolium.—*J. Wright.* Tritonia (Montbretia) crocosmiflora = *T. Pottsii* × *Crocasmia aurea*.—*M. J. S.* 2, Polystachya luteola, Hook.—*E. G. L.* Probably Betula pendula, but cannot determine without better material.—*H. G.* 1, Euphorbia peplus; 2, Veronica polita; 3, Potentilla anserina; 4, Scabiosa Succisa; 5, Stellaria aquatica; 6, Polygonum persicaria.—*West Wickham.* Achillea ptarmica flore-pleno, dyed blue, probably.—*G. D.* 1, Hæmanthus species, probably an imperfectly developed *H. tigrinus*; 2, Helianthus rigidus; 3, Saponaria officinalis flore-pleno; 4, Fuchsia procumbens.—*C. L.* A very fine example of Houletia Brocklehurstiana.—*H. & Co.* Piptanthus nepalensis (evergreen Laburnum).—*J. F. W.* Ophiopogon Jaburan variegatum.—*W. D.* 1, Croton (Codiæum) angustifolium; 2, Croton variegatum; 3, Ixora coccinea; 4, Ixora Dixiana; 5, Dipladenia amabilis; 6, Poinsettia pulcherrima var. fastigiata; 7, Mesembryanthemum cordifolium variegatum (variegated Ice-plant); 2, Alternanthera paronychioides major; 3, Echeveria glauca.—*J. R. P.* 1, Prumnopitys elegans; 2, Cupressus thyoides; 3, Cephalotaxus pedunculata var. fastigiata; 4, Acer campestre; 5, Spiraea Nobleana; 6, S. japonica; 7, S. Douglasii.—*A. J. C. J.* 1, Geranium sanguinea; 2, Galium verum; 3, Polygonum cuspidatum.—*X. (from abroad).* Clerodendron foetidum.

NATIONAL CHRYSANTHEMUM SOCIETY: *Anxious.* The next meeting is on Monday, September 26.

ORCHID STAGE: *Orchid House.* The kind of staging most favoured by cultivators is one made of battens standing 6 or more inches above an impervious one. Moisture-holding materials, as partially decayed tree leaves, coal ashes, gravel spar, shell gravel, &c., being placed on the latter.

PINUS STROBUS: *L. E. Smith.* Kindly send full address. The matter shall then have attention forthwith.

TOBACCO: *G. K. G.* The leaves are of use the first year; indeed, the plant being grown as an annual in the open air dies away during the winter. The plants should be raised in heat, and planted out as soon as it is safe to do so, so as to have full-grown plants in September, whilst there is still warmth enough to dry the leaves under cover without the need of fire-heat, though the latter has usually to be made use of to finish off the drying process. Side-shoots should be pinched out, and when a good proportion of large leaves are formed the plants are the better for being topped, this operation usually removing the flowers.

TO KEEP MAIDENHAIR FERN FRESH: *E. H. W.* The plants are grown entirely cool, or they are placed in a cool house for a week or two previously to cutting the fronds, and scarcely shaded at all from the sun, in order to impart firmness to the tissues. It is a good practice to immerse the fronds in cold water before making use of them in floral devices.

VINE: *A. C.* Golden Champion.

WATERPROOF, TRANSPARENT PAPER FOR COVERING GLASSHOUSES: *C. A. C.* Can you send some here for our inspection?

WHITE-FLOWERED PEA: *E. H. W.* What is meant, is probably, Lathyrus latifolius albus, the "Everlasting Pea," itself a slight variety of *L. sylvestris*, a common European species.

COMMUNICATIONS RECEIVED.—*T. W. B.*—*W. Treseder.*—*T. F. W.*—*D. Nicoll.*—*A. Christie* (arrived too late).—*Dickson, Brown, & Tait.*—*A. D. Christie.*—*Trowitzsch & Son,* Frankfurt am Oder.—*E. B.*—*A. D.*—*E. S.*—*A. G.*—*M. T. M.*—*M. Buysman.*—*D. R. W.*—*T. C.*—*D. T. F.*—*J. Cheal.*—*W. T.*—*E. B. J.*—*M. C. Lacy.*—*Amateur.*—*Constant Reader.*—*X. Y. Z.*—*J. Shaw.*—*T. W. W.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*C. R. de la Salles.*—Various from Bazley Bros.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE Gardeners' Chronicle.

SATURDAY, SEPTEMBER 24, 1898.

THE GARDENS AND GARDENER AT COMBE ABBEY.

THE residence of the Earl of Craven is situate nearly midway between Rugby and Coventry, being rather nearer to the latter very interesting town than to Rugby. The nearest railway station is a small one named Brandon, on the L. & N.-W. Ry. In walking or driving from the smart little village of Brandon, where the cottage-gardens are well cultivated, and the hedges are good and neatly trimmed—to Combe Abbey—one gets a glimpse of a bit of characteristic Warwickshire scenery. There is little that is wild, or even picturesque in the landscape; the country is too flat to afford such effects, but there are extensive tracts of rich pasture land; the trees, such as Oak, Ash, Beech, and Elm are very fine umbrageous specimens, and the lanes are pretty. Gaining the estate, a drive almost straight, and about 2 miles in length, leads to the noble Abbey, the first half of the drive being through a plantation, and the remaining portion through the park, in which feed hundreds of deer. A general view of the south part of the Abbey from the park, and showing the deer under the trees, is reproduced in fig. 61, p. 230. The original Abbey was built more than eight centuries ago, but the greater part of the present building is modern, whilst its style of architecture cannot be satisfactorily described, so irregular is it, and non-characteristic. In the *Graphic Illustrations of Warwickshire* we read thus:—

"The Princess Elizabeth, daughter of James I., and afterwards Queen of Bohemia, occasionally resided here with Lord Harrington, who was entrusted with the superintendence of her education. The son of Lord Harrington dying without issue, the estate was shortly after sold to Sir William Craven, the ancestor of the Earl of Craven, the present possessor. The eldest son of Sir William Craven having at a very early age signalised himself in Germany and the Netherlands under the Prince of Orange, was, on the accession of Charles I., ennobled by the title of Baron Craven, and at the Restoration advanced to the dignity of Viscount Uffington and Earl of Craven. Urged by an enthusiastic desire for glory, and perhaps also, as is supposed, by a chivalric attachment to the beautiful, high-minded, and accomplished Elizabeth, Queen of Bohemia, he was one of the most ardent of that gallant band of Englishmen who strove to reinstate her unfortunate consort, Frederic, in his possessions. Through all the distresses and calamities with which Elizabeth had to contend after the death of Frederic, Lord Craven continued to devote himself and his fortunes to her service, and it was at length, owing principally to his munificence in appropriating his mansion of Drury House to her use, that she was enabled, in 1661, to return to her native country, where she shortly after terminated her eventful life, bequeathing to her valued friend and benefactor her papers, books, and pictures, which latter form an appropriate and

interesting part of the excellent and valuable collection of paintings with which the several apartments of Combe Abbey are adorned."

One of the most remarkable of the natural features of Combe is the very large lake that stretches away from the front of the house a distance of $1\frac{1}{2}$ miles, and covers an area of 90 acres. This lake was the work of "Capability Brown." The outlines of this huge lake are very pleasing, and as one walks around it, he realises that there are few, if any, of our country seats that possess such a feature. Unfortunately, the best part of the lake, from any standpoint, is the end furthest removed from the Abbey; indeed, the way in which it approaches the residence lacks nobility. The water is well stocked with fish, and there is a considerable variety in the aquatic birds which adorn its surface. Towards the further end there exists a heronry, and the ungainly nests of these now rather uncommon birds are plainly visible in the trees. The scene at this point is extremely wild, charmingly unfamiliar, and with a field-glass, how easy it would be to linger there, when the summer's sun makes the air upon and around the water warm and pleasant! Nor have we cited all the charms there exists in connection with the lake, for a study of the number of aquatic plants on the surface of the water, indigenous and naturalised, would offer great interest and enjoyment. A considerable tract of land near to the lake is little else than a wet bog, and a number of rare British plants peculiar to such sites have been discovered there.

In the *Gardeners' Chronicle* for May 7 last, Mr. Miller told how he had treated the narrow end of the lake, which had become so silted up by the inflow of a muddy stream that it had grown into an unpleasant-looking, evil-smelling swamp. In the place of dredging and distributing the mud on the surface of the land, which method was abandoned on account of the cost, canals were cut through the mud, and ridges were thrown up between them, 2 to 3 feet above the level of the water area. These ridges have been planted with suitable species of semi-aquatic plants, and further planting has still to be done. Short of thoroughly dredging the whole area, a more satisfactory method of abating the evils that existed could not have been adopted.

The gardens proper were laid out in their present form by the veteran who has still charge of them. In the heading to this note the "gardens and gardener" have been associated, and for this reason, that it would be quite impossible to write or to think of the one apart from the other. One cannot study the gardens without obtaining a great deal of knowledge therefrom respecting the man who designed them, and to some extent has since controlled their development. Mr. W. Miller took service under the Earl of Craven so long ago as 1861, and was engaged by his lordship from the gardens of the Royal Horticultural Society of London. In the Lord Craven of those days the new gardener found a sympathetic employer whose encouragement he could depend upon in any efforts he made to improve the establishment. Consequently a new kitchen-garden was made, the grounds were planted with the best of the ornamental trees and shrubs that were to hand, and many new drives and paths were made, or existing ones altered. Thus was greater convenience secured, and unsightly objects screened, or a pleasing view more fully opened. Flower-beds were designed, and for

some years the flower-gardening at Combe was equal to the best that could be found in any part of the country. There was, for instance, the unique ribbon-border at the foot of the kitchen-garden, and just outside its walls. That border was 700 feet in length, and the number of plants required to fill it was very large. There was much additional bedding in various suitable spots, but little, however, immediately round the Abbey, which is unfortunate in regard to its position. In the kitchen-garden were erected the whole of the glass structures, and most of our older readers will remember what an excellent fruit-grower Mr. Miller proved himself. In those days the Grapes, Peaches, and other fruits from Combe, but especially the Grapes, were exceedingly difficult to beat on the exhibition-tables, Mr. Miller having obtained three gold medals for collections in three successive years at Regent's Park.

THE GARDEN AT THE PRESENT TIME.

Had the energetic and liberal policy that characterised the management of the gardens in Mr. Miller's earlier days been permanently continued, Combe to-day would have been a garden of great fame. From various causes, however, the speed had to be slackened; alterations and improvements were not commenced with the spirit of former days, and the grounds as already laid out were found to be too expensive of maintenance for the means of the owner; thus the more extravagant kinds of flower-gardening were sacrificed, many flower-beds turfed over or planted with shrubs, and certain paths and lawns it was intended should be kept trim have been regarded as more or less outside the "kept" portion of the establishment.

Having said this much respecting the history of these gardens, we will now describe briefly some of its features as we observed them a month ago. In the first place, the kitchen garden is an excellent type of an ornamental vegetable-garden. It is 4 acres in extent, and is enclosed with brick-walls, which are covered with fruit-trees. The greater length is from north-west to south-east; and along the wall that faces nearly south are the lean-to Peach-houses and vineries. At the south-west end is Mr. Miller's residence (see fig. 62, p. 230), beautifully clothed with flowering and berry-bearing plants, including *Wistaria chinensis*, *Cratægus Lelandi*, and the *Virginian Creeper*. When the photograph was taken the house was clothed by varieties of the beautiful *Ceanothus*, but a severe winter killed these. From this house runs down through the centre of the garden a path of unusual width, which leads at one end into the pleasure-grounds, first passing through what was intended to be, and is sometimes called, an ornamental garden entrance. The architect who designed it had not the happiest conception of the fitness of things. A view of this principal entrance to the kitchen garden is given in fig. 63, p. 231, and through the centre of this may be seen the gardener's house 700 feet distant, connected one with the other by the broad path above mentioned. Midway of the length of the garden, two side-paths lead from the central one, and at this point a fountain exists, which sends forth several spirally-twisted streams of water into the air, to watch which for a length of time is bewildering. This fountain stands in a large stone basin, containing some *Nymphæas* in bloom. The ground slopes very considerably to the south-west, and at three-fourths of the descent a terrace was formed with grassy slopes, whilst the path is conducted down some steps. Around the fountain flower-beds are arranged, and it appears

very unusual to see the rows of Celery terminate in closely-mown turf, and breaks of Brassica encircled with borders of Sweet Peas, of Roses, and neatly-trimmed hedges of Cupressus Lawsoniana. The whole of this kitchen-garden is treated in an ornamental manner that is very pleasing, but one's curiosity is aroused as to how the gardener manages to obtain from the comparatively small area of land within the walls that is given to vegetables, the amount of produce required for the kitchen. We suspect the explanation would be in intensive cropping, allowing no waste and no fallow land. That no waste of fruit is permitted was clearly indicated by the method adopted to protect Strawberries and some other kinds from birds. Over the Strawberries a frame-work about 2 feet high was erected, and the top and sides were covered with small meshed wire-netting, a substantial and more effective means than merely throwing fish-nets over the plants. Instead of describing the vegetable crops in detail, which it may be remarked were generally praiseworthy, we would mention a flower-border in this same garden which was just looking very gay. In it were Gladiolus, Pentstemons, Gaillardias, and a few other species. We remember it so well because Mr. Miller remarked: "This is Kelway's border; are not the Gladiolus and Pentstemons fine? I always have a Kelway border." There were other features in this walled-in garden that might be referred to in more detail, such as the Gooseberries on trellises; the fine lot of Violets; two exceptionally fine specimens of the Golden Yew, &c., but the Peach-houses and vineries, and plant-houses were awaiting inspection.

Here we see what some people call the old-fashioned Peach-cases, similar, yet in detail different, to those at Trentham and other places. These at Combe are about 8 feet wide only, and the top is a span resting on a wall, with an upright front of glass. They are probably 18 feet high. Here were trees of the variety Padley's Seedling (Padley's Early Purple) = Grosse Mignonne, *vide Hogg's Manual*, for which Mr. Miller had more than one good word. It was sent out by Osborns' from their nursery at Fulham more than thirty years ago. In training his Peach-trees, whether inside or out, Mr. Miller secures perfectly straight sticks in the positions the young shoots are to take, and as during the summer the shoots extend, they are secured to these sticks, which is sufficient to make certain their being trained straightly.

The methods of Vine culture practised at Combe have been more than once described in these pages by Mr. Miller himself, and years ago he propagated Vines by layering the canes in place of the orthodox system of striking the eyes. On the present occasion, therefore, though we noticed the bricks upon the borders, which, says Mr. Miller, keep the surface moist, and so encourage the roots thereto, and other characteristic features in their culture, all of which have been explained in these columns; the reader will excuse us from writing at the moment more fully upon the subject.

At the back of one of the vineries was a fine plant of the true *Passiflora edulis*, bearing a heavy crop of fruits, there being something like 650 of them.

THE FRONT FLOWER-GARDEN.

There needs still to be remarked upon a feature in these gardens that has been added only two or three years since. It is the new



FIG. 61.—COMBE ABBEY FROM THE PARK. (SEE P. 229.)

flower-garden immediately in front of the Abbey. One cannot wander through the gardens of Combe without being struck with the evidence of Mr. Miller's originality, as seen in his treatment of numerous circumstances that have arisen from time to time. He is by no means a copyist; and where he fails to strike out a line of his own, whether in the training of his trees, the clearing of the lake, or whatever it be, it is because he has been unable to think out some method better than that in use by his contemporaries. He has no desire to follow in his neighbour's footsteps, he would much rather

they follow him. This new parterre flower-garden was designed after the determination had been made to avoid if possible triangular and other symmetrical beds of the ordinary type.

Mr. Miller, with pencil and paper, soon developed an original design, and the same having been since reduced to practice, and to some little extent modified, the result is an exceptionally pleasing flower-garden, altogether dissimilar to any we have previously seen. It has most resemblance perhaps to the type at Eaton Hall, the Duke of Westminster's seat,



FIG. 62.—THE GARDENER'S COTTAGE, COMBE ABBEY. (SEE P. 229.)

which flower-garden was illustrated in the *Gardeners' Chronicle*, Jan. 7, 1871. At Eaton, however, the beds represent two instances of a capital W, while the one at Combe portrays an idealistic tree growing from an ornamental vase, nearest the house, and spreading in fanciful curves over the space the garden covers, some of the branches terminating in little beds, similar in form to the Shamrock leaf; and others resemble the flower-head of a Thistle. The vase and its ornamentation is planted in semi-carpet-bedding style, and the branches of the trees are like so much tracery, the beds being only from $\frac{3}{4}$ of a foot to about $1\frac{1}{2}$ feet in width. The planting of such beds can only suitably be done with neat-habited plants, and Pelargoniums and other showy species were most effective. By the sides of this tracery there are two long beds in which a very bright display was made by certain hardy perennial

example of one of the old school, who acquired their professional training in the days of Fleming of Trentham, Paxton, and others, he is also one that has not been slow to accept new ideas and adopt new methods of practice. Nevertheless, if there be anything in the foregoing lines that would suggest the contrary, it may be safely asserted, Mr. Miller has a proper appreciation of the formal style of gardening. This may be easily detected in his treatment of the kitchen-garden, in the trimmed stone-wall-like hedges, and other features. Had circumstances required it, he would have formed and maintained a garden of the above description, and the work would have been agreeable to him. Mr. Miller never did lack energy, nor does he now. When able to obtain leisure from the work of superintending the gardens and woods, and doing a large amount of the work that belongs to an estate office, he may be found

Six fine specimens, each bearing about a dozen handsome flowers, with dark claret-purple sepals and petals, and a bright rose-coloured lip veined with crimson, are in flower in the fine collection of Edgar Cohen, Esq., Hall Road, St. John's Wood (gr., Mr. A. Vass), and a very pretty group they make, arranged with some good examples of *Odontoglossum grande*, above which rise the graceful sprays of white and rose coloured flowers of *Oncidium incurvum*.

The varieties of *Cattleya Loddigesii* are also here very effective, and a large number of fine specimens of *C. labiata autumnalis*, and a smaller number of *C. aurea*, promise flowers later in the season.

PICKING, GRADING, AND PACKING APPLES.

APPLES are already appearing in the markets in quantity, and the all-important question comes in as to picking, grading, and packing. It is equally true in this country, as in Canada, that there is still room to learn something of this trade, as to how to handle and when to handle this wonderful commercial product—the Apple. Mr. L. Woolverton, of Grimsby, Ontario, in writing recently upon this subject, says, there is no question that the fruit industry is one of the most important industries in that province. So rapidly has it developed in some sections of late, that the income so derived far exceeds that from any other part of the farm. All this is in spite of the many disadvantages under which fruit-growers often labour.

The first means, he says, of aiding in the development of the Apple industry is by imparting information concerning profitable varieties. Many orchards are full of worthless varieties, fit only for cider. The trees occupy the same space as good varieties, and they cost as much to cultivate and prune; the fruit costs as much to harvest and market, besides glutting the markets and giving growers a bad reputation, while the margin of profit, if any, is the lowest possible. What do we hear constantly from fruit salesmen? "Good sound winter Apples wanted; no sale for inferior trash." There are two questions which have to be studied: (1), the varieties most wanted for the market, and (2), the places where each variety will succeed. Trees that bear small Apples should either be cultivated and manured until they produce large fruit, or else top-grafted with large fine varieties that would pay for handling.

Of course, it goes without saying that the fruit-grower who wishes to make a name for himself must have every Apple picked and handled like eggs, and not like Potatoes, for every tiny bruise tends to make the fruit of second grade.

The next important steps in helping to develop the fruit industry are proper methods of grading and packing.

There is a common notion that Apples should lie sweating in heaps for some days before packing, but this is a mistake, for in this way they are made to ripen too fast. They should be packed as soon as picked, and hurried away at once to some cold store-house if the best results are to be expected, so that their crispness may be retained.

Mr. Woolverton's plan is to take his packing-table out to the orchard, and on it the pickers empty their baskets as the fruit is gathered, and the Apples are at once packed and carted away. In this way, one man, with a little assistance, will sort and pack for five or six pickers, and several gangs may be sent out if necessary. The ordinary first-grade fruit should go into barrels, and fancy Apples into smaller packages. This fancy stock is picked off the packing-table and sent to the packing-house, where women are employed to wrap the fruits in thin Manila-paper, and pack for a special trade. Now, if this class of Apples could be stored in cold-storage warehouses safely, and sent to market just when each variety is most wanted, at the best prices, a great step would be taken toward developing the Apple industry.

Really the most deplorable ignorance exists in this work of grading Apples, or else the utmost carelessness. Ideal packing is scarcely thought of. Growers need to take some lessons from our Californian



FIG. 63.—CHIEF ENTRANCE TO THE KITCHEN-GARDEN, COMBE ABBEY. (SEE P. 229.)

and summer bedding plants, disposed in a mixed pincushion system, thus affording a feature in the same view, of entirely different style. We would suggest that a visit to Combe would be of interest to many a gardener, if only from a study of this flower garden.

In the pleasure-grounds may be noticed many a fine tree, and some good specimens of coniferous species. Of Cupresses *Lawsoniana* there are hundreds of instances, and it is used to form capital hedges. *Taxodium distichum*, the Deodar Cedar, the Scots Fir, *Abies Pinsapo*, *A. Douglasii*, *Picea Nordmanniana*, and others succeed well. There is a *Wellingtonia* avenue and, singularly enough, the trees fully exposed to the east are the most vigorous.

Mr. Miller has lived at Combe many years. He can look up to Poplars over 60 feet in height, and remember planting the same. He may not remain very much longer, but he has already seen the effect of his early work—an experience denied to most gardeners. Though a good

studying British plants, especially those species that grow in and about the beautiful lake. His library, which contains an excellent copy in five volumes of *Curtis's Flora Londinensis* published in 1777, and other valuable books, affords him the means of following his study with success, and is an increasing source of interest and pleasure. *R. H. Pearson.*

ORCHID NOTES AND GLEANINGS.

MILTONIA SPECTABILIS MORELIANA.

SINCE the introduction of this distinct and richly-coloured variety, fifty years ago, there appears to have been no large importation of it at any one time until recently, when a fairly large quantity of plants of the true variety was imported by Messrs. F. Sander & Co. Buyers of this importation did not expect all the plants to be the true *M. s. Moreliana*, and they were doubtless agreeably surprised when the plants flowered.

friends, with whom packing is a business, and who do not hesitate to pay packing companies a certain price per package for grading and wrapping their fruit ready for distant shipment. Large and small Apples should never go in the same package. We wish to emphasise the fact, that if the fruit-grower would be successful in the preservation of perishable fruits, he must begin to put them into cold storage before the first stage of ripening begins. The process of ripening, the process of maturing, is in reality a process of decay; and although at the beginning it may not be recognised as such, it goes on gradually step by step from the time the Apple is green till the time it is in a perfect state of maturity, and later on when it is past that step and has begun to decay. So that it is absolutely necessary that the grower should recognise this fact and this principle, and in storing fruit put it in a storage-room before any actions consequent upon the beginnings of ferment commence. *J. J. Willis, Harpenden.*

PLANT NOTES.

INULA HOOKERI.

TWENTY-FIVE years ago I cultivated *Inula glandulosa*, when it was by no means common in gardens. It used to make a few very large flowers, on not very robust stems, 2 feet high, and many barren tufts, having a disposition to die out. Fifteen years ago I obtained—I forget where—a plant named *I. Hookeri*, growing 5 feet high, with very stout stalks, always monocephalous. The flowers resembled those of *I. glandulosa*, but the rays were shorter and straighter. The seed of this plant—I still have the original—is abundantly fertile; the seedlings are of various height, generally 4 to 5 feet, and the flowers very large and handsome, generally with long rays. I sent flowers selected from three varieties, all seedlings of the same plant, to the highest botanical authority, and had them returned respectively *I. glandulosa*, *I. grandiflora*, and *I. Hookeri*. I concluded that *I. glandulosa* and *I. Hookeri* had amalgamated into a mixed lot in the seedlings; but *I. grandiflora* I never had in my garden. I may add that I have carefully, but without any conclusive result, compared my plants with the characters of the three named species, as given in De Candolle's *Prodromus*, Boissier's *Flora Orientalis*, and Hooker's *Flora of British India*. As for *I. grandiflora*, five years ago an *Inula* was sent to me as *I. Oculus Christi*, which puzzled me, and I sent it to Kew and to Geneva, to the Boissier Herbarium, for a name, and it was returned from both as *I. grandiflora* (Willd.). This surprised me, as it is of slender growth, hardly more than one foot high, and the flowers are scarce half the size of those of *I. glandulosa*; though, according to E. Boissier, *Flora Orientalis*, vol. iii., p. 187, *I. grandiflora* ought to have the larger flowers of the two. All these *Inulas*, as grown in my garden, have glands on the edges of the leaves, and are strictly monocephalous, though *I. Hookeri* is described as having one to three flowers on a stalk. I do not know where to get further help in the identification of these doubtful plants. *C. Wolley Dod, Edge Hall, Malpas.*

ARCHED CORDON PEARS.

THE practice of growing cordon Pear-trees over garden walks, secured to iron arches, is not at all uncommon. On the other hand, it is not at all common. It is yet a very pleasing way of growing these trees, and as a rule they fruit very well. I have not anywhere seen a better example of this form of training than is to be found in the gardens of Sandhurst Lodge, near Wellington College. This is the residence of Sir William Farrar, who is as enthusiastic an amateur horticulturist as his gardener, Mr. Townshend, is one professionally. The garden-walks where planted with Pears in this way, roughly form three sides of a quadrangle, and the entire length is probably 150 yards, the width across from row to row is about 7 feet, and the trees are on either side planted 4 feet apart; not in all, but in most

cases, the same variety has been planted opposite. That is a rule which should always prevail, as the arch is so much more evenly furnished. Some of the varieties are on the Pear stock; some on the Quince. The latter, even in the sandy soil of the garden, seems to give rather the better results. Free growing varieties give the best appearances and crops. In almost every case the trees have sometimes met overhead, and the arch is then completely furnished. Many of the trees are heavily cropped, and all are very clean. The vistas furnished by the long bower of trees in fruit is very pleasing. Pears on walls, too, are first-rate here, and cropping heavily. Pitmaston Duchess, grafted years ago on Jargonelle, is fruiting grandly above, but branches of the original tree have not a fruit on them. *A. D.*

ROUND MAIDSTONE.

PRESTON HALL.—At this fine place, belonging to Mr. H. L. C. Brassey, we found the garden to be still under the capable charge of Mr. Walter Jarman, who, when five years ago we last visited Preston, had been there rather less than two years. In the time that has elapsed much improvement has been effected, particularly in the indoor fruit-department. We well remember some rare old Vines that, though still affording a certain amount of fruit, were practically of little future service. In their place now may be seen nice young Vines of strong growth, bearing excellent crops of Grapes. This kind of work needs to be done in instalments, however, if an average yield of fruit is to be maintained, and a few of the less aged Vines have not been as yet rooted out. In these cases however it was observed that fresh canes had been laid in, and when these had become large enough, the older ones were removed. The roots are the same, but in the obtaining of a new top-growth to a partially exhausted Vine, a benefit follows that all save those who have experienced it would think improbable. The vineries generally were such as a gardener may show a visitor with satisfaction, and the finish and flavour in the handsome black Grape Madresfield Court, and in the Alexandria Muscats was capital.

Anywhere other than the Maidstone district, Preston would be considered an extraordinary place for Peaches. Even indoors the yield is very large. There are numerous houses devoted to them, one of the ranges being 150 feet long. The fruits had been gathered from most of the trees, but all of them bore indications of healthfulness and good fruiting qualities. One characteristic the trees had. They had not the large amount of small fruiting wood that in some districts is thought to be so essential. In place of that there are stronger shoots, and some of them grow several feet in length. A large number of Melons is grown, and we observed many fruits ripening. Mr. Jarman said that on the previous day the plants from one house had been thrown away. They had yielded sixty fruits which averaged 2½ lb. each. There is a nice fernery here, and a fig-house is covered with one fine plant of Brown Turkey. This tree grows up the back wall, and is trained down the lean-to roof-trellis, consequently it is in a most unnatural position, but the tree crops splendidly. In the greenhouse were some pretty Marguerite-Carnations, carrying a fine lot of lovely blooms. They were from seed sown in February, and for cutting purposes the flowers are as pretty and useful as the florists' Carnations. An unusual feature was remarked in the excellent specimen plants of Coleus in 8 and 10-inch pots, and several feet in circumference; and such plants are not now seen in many gardens.

The fruit outside was abundant. The Peach walls looked really beautiful, and most of the trees still bore quantities of splendid fruits, generally approaching ripeness. The yield of Peaches, of course, is far beyond the needs of the establishment, and thousands of them are sent to market. Of Apples and Pears, there are good crops of fruits this season; some varieties have more or less failed, others are better cropped than usual, but all out-of-door fruit-trees, alike with everything else, are suffering much from drought. Two pleasant features of the garden are the Pear-

tree arbour and the Rose arbour. The latter costs considerable labour to keep it in fine condition during such a season, but it is a valued feature, and in early summer the plants afford such a wealth of the loveliest blossoms, that whilst water can be procured, it is not grudged them. The Pear arbour is not so old—indeed, five years since we remember it to have been very imperfectly covered; but the trees have been encouraged to grow, and the arbour now presents a very nice appearance, the large fruits hanging beneath contributing greatly to this effect.

The view from the north front of the hall is just as lovely as when last we had the pleasure to see it. It carries you over part of the park to the village of Aylesford, where the pretty little church is an object of tender beauty, and beyond over typical Kentish scenery terminating in the circular range of hills, at the foot of which can be seen several chalk pits. But close to the hall the trees are higher; several of the Conifers have specially improved, and the garden is thus better furnished. In the parterre flower-garden, which is just below a terrace that screens the beds from view from the lower windows, the species of plants used show that an endeavour is made to use a class of beautiful plants that show the latest striking improvement wrought by the hybridist. We refer to the Cannas; and most of the curious scroll-like beds are filled with them. In some, the improved varieties sometimes described as *Gladolus*-flowered Cannas have been exclusively planted, and they were flowering freely and well. It needs hardly to be said that the effect of them is at once uncommon and grateful. But blending the old with the new, in several of the beds was remarked that prince of bedding *Pelargoniums*, *Henri Jacoby*, blooming with its well-known freedom, and producing an effect of showiness.

Two beds that flank a pleasure-ground path near to the hall are worthy of remark. The centre of each was planted sparsely with an *Aucuba japonica* about a foot high, and the interspaces with the variegated *Pelargonium Bijou*. The margins contained exceedingly dwarf plants of *Retinospora*, and each plant of same was surrounded with *Iresine Lindenii*. The effect of the whole was most satisfactory, and, said Mr. Jarman, when the bedding-plants are removed, the spaces betwixt the evergreens will be filled with bulbs.

We reproduced a photograph of Preston Hall, showing part of the front flower garden, in the *Gardeners' Chronicle*, August 26, 1893.

(To be continued.)

LOBELIA RIVOIREI.

ON the occasion of the meeting of the committees of the Royal Horticultural Society on September 6, amongst varieties of *Lobelia* shown from Sir Trevor Lawrence's garden by Mr. Bain was a pale pink-flowered form, having a median line of a crimson tint and a trace of the same tint in the eye (fig. 64, p. 233). The plant has the general habit of *L. cardinalis*, but the leaves and stem are of a green colour. It then received an Award of Merit. For the sake of variety, it is worthy of a place in the flower border.

MARKET GARDENING.

HARDY FRUITS.

(Continued from p. 193.)

BUT there are other things that must be given attention before one can reckon on marketing his fruit. Alas! just as the fruit is ready for gathering, it too frequently happens that a storm will thresh many of the Apples from the trees, and bruise and disfigure those that are left. In view of this, it is a good plan to plant a row or two of sheltering trees to protect your orchard where it is most exposed. Fruit-trees may be used for the purpose, the *Farleigh Damson* being especially suitable, as it forms a close-growing, twiggy tree, and if pruned judiciously the first year or two after planting, it not only makes a capital shelter, but bears fruit at an early age. I have it on very good authority that one grower in a scarce year

marketed no fewer than 3000 bushels of this fruit, and obtained an average price of 14s. a bushel for them.

In planting for shelter, use two rows of trees, and these may be placed 12 feet apart in the rows, every alternate row being in the spaces between the plants in the former one. It will not hurt these Damson-trees if they be planted close to, or even in a quickset or other hedge. If a screen is wanted in the quickest time possible, plant Black Italian Poplar, or the sort known in nurseries as "Nova Canadensis," which is not so strong in growth, but more twiggy, and it is not so easily injured by wind as the first named. There is always danger, however, that the long roots

dwarf or bush trees in plantations. Doubtless for large fruits, this is by far the better method, as the liability to be blown down is thus minimised, and what is of great import to those who have land upon short leases, or a small balance at their bankers, the return is much earlier, as bushes of Currants, Gooseberries, Raspberries, and Strawberries may be grown between the rows of trees, which will make a profitable return long before the Apple-trees begin to bear remunerative crops. Dwarf or bush trees, costing only two-thirds as much as standard trees, are recommended for small tenant-farmers and others who do not own their land.

growth, and thus failing to properly ripen, it remains sappy and unfruitful. Further, in the case of some tender sorts, the sap-laden cambium is frozen, and in thawing the cells are ruptured, and canker and other evils supervene. These remarks are very necessary in the case of Apples on the dwarfing or Paradise stock; and if the intending planter wishes quickly to take a crop from his plantation, let him plant Apples only so worked. On the other hand, if a good permanent orchard be desired, the Crab stock is the best, though it will delay the fruiting period.

Apples cultivated as dwarfs or bushes should be planted as they are received from the nursery, and the



FIG. 64.—LORELIA RIVOIREI. (SEE P. 232.)

from such trees will invade the good soil in the orchard, and rob the fruit-trees; so if practicable, plant the other side of your hedge, and have a dry ditch between to check the invader. No one, I fear, needs to be told that the weather has much to do with success in this industry, also the absence of insect pests which are, specially in some seasons, very difficult to combat.

Intending fruit-growers I would strongly advise to study the admirable book by Miss Eleanor Ormerod, *Injurious Insects* (London: Sonnenschein & Allen).

DWARF OR BUSH APPLE-TREES.

So much, therefore, for the Apple grown in orchards as standard trees; and now a few words on

They may, in the first instance, be planted 12 feet apart, and the intermediate land be cropped with soft fruits, &c., until the young trees require all the space, always bearing in mind not to cultivate too deeply, or too near the trees, as this not only disturbs them, but has a fatal tendency to drive the roots downward; whereas, to get the best quality and quantity of fruit, the roots should always be encouraged to keep near the surface of the soil, where they are naturally stimulated by the life-giving rays of the sun, and artificially by the addition of occasional mulchings of manure. But be judicious in the use of the latter, and if your soil be good and moderately deep, the less of stimulants you apply the better, as they are apt to force the trees into rank and coarse

next March the shoots will need heading back to three, four, or at most five buds. After this, all that is generally called for is to remove weakly and crossing branches with a sharp knife, with a view to forming an open or basin-shaped tree, unshaded at the top, and able to receive and appropriate all the sunshine possible, producing ripe, healthy wood—an essential condition of success. After this, the majority of trees, if left to themselves, will yield good crops of fine fruit, so large and handsome that during the first few years, if dessert kinds are grown, it may profitably be sold by the dozen, in punnets, or small open baskets. If he be inclined also, the grower may exhibit with a fair chance of success. It must, however, be noted here that the best-coloured

and handsomest fruits are grown on the Paradise stock, which no doubt is owing to the peculiarity of this stock to make masses of fine fibrous roots at the surface of the soil.

Grand exhibition examples of Apples, Pears, and hardy stone-fruits, are produced by what are called cordon-trees, from the French word *cordona*, a girdle; these may be single, or in two, three, or four tiers; but as they are "fancy" trees, and not commercially remunerative, I shall not further discuss them.

PYRAMIDAL APPLE-TREES.

It remains now only to name the Pyramidal Apple, but I have found even in gardens of note the management of this kind of tree is so little understood that I would advise those who do select this form not to prune excessively; and supposing you get two-year-old pyramids from the nursery, do not cut them at all till the following March, and then only head-back those shoots which spring from the centre bole to an outside eye or bud, and cut down the leader to a single bud. The following year another will come on the opposite side to the first, and thus ensures a tolerably straight centre to your tree. If the trees are on the right Paradise stock, and consist of fertile varieties (and I do not advise you to plant any others), after the third year let Nature have her own way. Yet varieties of Apples have many distinct habits, and there is no golden rule for their management. The cultivator must keep his eyes open and be docile, when Nature will assuredly reveal her secrets.

For pyramidal Apples in a plantation which is to be permanent, and the ground between the rows occupied by annual crops or Strawberries, let the stock be of the English or broad-leaved Paradise, on no account using the French stock, not that this is so bad as it is sometimes painted. I have heard fruit-dealers state gravely, and no doubt they believed it, that the cause of the dry, bad cooking quality of continental Apples was, "they were grafted on Willow!" The truth probably being that the stock used forces maturity. If, however, the soil be poor and thin, the trees may be worked on the ordinary Crab-stock, which, though it may not give a return so quickly as the first, has the merit of permanency; and if the trees on it are looked after and not allowed to grow up like Birch-brooms, so compact that no air or sun can penetrate their branches, the trees will become fertile and produce good fruit.

When manuring is necessary, put on a good mulching of farm-yard or stock-yard manure, and leave it on the winter through, digging or ploughing it in, in the following February. Should artificial manure be preferred, as being more easy of application, let such be rich in phosphates. My Kent friends use shoddy, or woollen rags, in their plantations with good effect. *Experience.*

MR. W. PFITZER'S GARDEN AT STUTTGART.

[See Supplementary Illustration].

MR. PFITZER'S garden, attached to his nursery at Militar, Strasse, with its little fountain, green lawns, a fine Willow, is like an oasis in a desert of bricks and mortar. The houses in Stuttgart generally have scarcely any front gardens, but are built close up to the pavement. The lack of trees and shrubs is somewhat counterbalanced by the beautiful hills and vineyards which surround the city on three sides, and which may be seen from the ends of nearly all the streets running from one side of the valley to the other.

The Willow-tree is a splendid specimen of *Salix babylonica* var. *Baron Solomon de Rothschild*, and has a history. It was brought as a cutting by Mr. W. Pfitzer, sen., the founder of the firm, and now a hale old gentleman, in the year 1850, from Boulogne, near Paris, from the garden of Baron Rothschild, where seeds had germinated on the banks of the Seine. It is a very vigorous and fine specimen, and it finds an abundance of moisture in the subsoil, but doubtless has been cut back to keep it in harmony with its surroundings. Unfortunately, however, a fungus

common to the genus *Salix* is attacking it, which, combined with the inevitable builder, who is particularly busy in the neighbourhood, will sooner or later doom the tree and its surroundings to oblivion.

Mr. Pfitzer's house and offices, almost hidden in the photograph by the Willow, are covered with *Aristolochia Sipho*, and at the front with *Wistaria sinensis*, &c., always a sight when in flower, as well as a fine *Reine Marie Henriette*, the red *Gloire de Dijon* Rose. The house in Moorish style to the right of the picture is the dwelling-house of Mr. Pfitzer's assistants. The roof of this building, which is flat, is gravelled, and decorated with fine specimens of *Chamærops excelsa*, pyramids and standards of Sweet Bay, bushes of *Punica Granatum* in tubs during the summer, &c., whilst along the railings Ivy-leaved *Pelargoniums*, *Nasturtiums*, and other summer flowers are planted in boxes.

In the garden itself, besides Sweet Bays, *Dracænas*, *Latantias*, *Chamærops*, *Conifers*, &c., are planted out in small groups, with such specialties of the firm suitable for this kind of work, as *Pelargonium semperflorens*, and tuberous *Begonias*, *Heliotropes*, or other older or newer plants, which it is particularly wished to display, such as the group of *Nicotiana colossea* variegata and *Arundo Donax* fol. variegata, as well as the *Ægopodium Podagraia* fol. variegata, round the fountain. The whole is finished off on this side with *Musa Ensete* and *Colocasia nymphaeifolium*, as well as *Cannas* and *Ceanothus*. These beds are planted several times each season, so that there is in them always something interesting and beautiful. The greenhouses, and the *Canna*, *Begonia*, *Tritoma*, *Phlox*, and *Aster* fields stretch away to the right of the picture, gradually leading up to the hills seen in distance. Our photograph was taken by Mr. Alfred Hirrlinger, Gartenstrasse, 9, Stuttgart. *H. R. W., Stuttgart.*

TREES AND SHRUBS.

ABELIAS.

THIS small genus of low growing shrubs should not be overlooked by planters, all the species included in it being ornamental in flower, leaf and habit, and therefore deserving of a place in the garden. Two come from China, one each from Mexico, Japan, and India. Although hardy in the south and west of England, they are better adapted in the north for greenhouse culture. The plants thrive in a sandy loam or peat; and they are propagated readily by means of cuttings taken in the summer, or by layering the shoots in the early spring, which, when done out of doors, should be protected in severe weather by means of handlights or cold frames. The plants possess deliciously fragrant flowers, and several of the species produce them in the autumn, when few other shrubs are to be found in flower.

Abelia floribunda and *A. rupestris* are the most deserving of cultivation. The first named is free flowering, the flowers of a rosy-purple colour; five-lobed, tubular, and about 1½ to 2 inches in length. They are produced in the axils of the leaves at the end of the branches, and appear in March. The leaves are dark-green, ovate, crenate, and smooth on the upper surface. It is a handsome, free branching evergreen shrub, with a rather straggling habit, and grows 3 feet in height. It is a native of Mexico, and was introduced in 1842. A figure is found in the *Bot. Mag.*, t. 4816.

Some fine plants of *A. rupestris* are now flowering freely at Woking. The flowers, pinkish-white, are produced in pairs at the ends of the branches. Their fragrance is similar to that of the common Jasmine. The plant is deciduous, and grows to a height of about 5 feet; the leaves are of a deep green colour, small and in shape oblong. It is from the Chamoo Hills in China, whence it was introduced in 1844. A description appears in *Bot. Reg.* of 1846, t. 8.

A fine garden form, called *A. rupestris grandiflora*, is sometimes met with, which has larger and finer flowers than the type. *A. spathulata* is a Japanese form, which I have never seen in flower. The flowers are white and fragrant, and the leaves bear a resemblance to *A. rupestris* in shape, and are of a deep-green colour. It was introduced from Japan in 1881, and is described in *Bot. Mag.*, t. 6601.

A. serrata is a very distinct evergreen species, with

large, red, fragrant flowers, that are produced in March on single terminal stalks. The leaves are deep green, and deeply serrated on the margins. The plant grows to a height of 2 feet, and is much branched. It was introduced from China in 1844, and is occasionally met with under the name of *A. uniflora*, and is described as such in *Bot. Mag.*, t. 4694.

A. triflora, a species that is rarely seen in gardens, is probably the least known. The flowers are of a pale yellow colour, tinged with red, and they are borne in triplets at the ends of the branches, and though small in size, they are produced in great profusion during the month of September. Its small, green leaves are lanceolate in shape. It is an evergreen shrub, with a much-branched habit, growing about 5 feet in height. It was introduced from India about 1847. So far as I can judge from small plants, it has proved as hardy as any of the species. A description appeared in *Paxton's Flower Garden*, p. 8 (1851-3). *E. S., Woking.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

Auriculas and Polyanthus.—The stock of these may be increased by dividing the plants at once. The plants should be lifted and pulled to pieces by hand, but do not divide them to a greater extent than necessary to provide the number of plants required. Plant them afterwards in soil that has been well dug, and that has been enriched by a dressing of well-rotted manure. Should the staple soil be of a retentive nature, some leaf-mould may be worked into it at the time of digging. When planting, take care to make the soil firm around each plant. Beyond keeping them free from weeds, the plants will need no further attention for some time.

Montbretias.—With the exception of Lilies, *Montbretias* are the most useful of late summer-flowering bulbous plants. The graceful spikes of bloom are most adaptable for use as cut flowers, and they last a considerable time in water. They succeed best in a light, sandy soil, and in a sunny position. The best time to plant is during March or April. The bulbs increase very rapidly in a favourable situation. The most choice varieties are *M. crocosmæflora*, the flowers of which are golden-orange in colour, and *M. solfatare*, pale yellow, with brownish foliage.

Ligustrum marginatum aureum (the Golden Privet).—There are but few hardy evergreen shrubs that can equal the Golden Privet in the striking effect it produces when judiciously planted. When planted in clumps by the side of a lake, or as a front row to shrubberies, it is very effective. The plant is a rapid grower, and makes an exceedingly pretty hedge, kept nicely trimmed.

The Rose-garden.—The recent spell of very hot weather experienced has had a very marked effect on the second, or autumn flowers. Rarely do the plants at this season of the year suffer from drought as at present, and the blooms are consequently poor. In very light soils it will be judicious to give the plants a good watering, not only to keep them in health, but to assist the development of any flower-buds, particularly those of the Tea varieties. The varieties, however, seem to have withstood the drought here much better than the Hybrid Perpetuals, and especially *Madame Van Houtte*, which has grown and given better flowers than at any time during the season. The blooms of *Viscountess Folkestone*, usually one of the best of Hybrid Teas for autumn flowering, have been literally bleached white, and have not the delicate flesh-shade that makes the variety so desirable.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Melons.—The latest plants upon which the fruits are now swelling, as the sun declines in power, will require more artificial warmth in proportion as the sun decreases in power. Maintain a temperature of about 70° by night and 75° by day, allowing a rise of 10° to 15° by sun-heat. It is necessary to obtain a sweet atmosphere in the house by ventilation, but this should be done gradually in the forenoon, and after reducing the same by degrees, the house should be closed early in the afternoon. Syringe the plants once on fine days, preferably in the morning, and cease syringing altogether when the fruits com-

mence to colour. To maintain a genial atmosphere during dull weather, the floors and other bare surfaces of the house may be damped. Supply water to the roots as often as the plants need it, and reduce the quantity given as the fruits commence to ripen. Pinch off laterals as often as may be required, and take care that the support used for the fruits, whether nets or bast, does not press the fruits too tightly. The two indications of ripeness, viz., fragrance and a cracking of the stem from the fruit, should be observed before cutting the fruits. It is best at this season to defer cutting a day or two than to cut too soon. Melons in frames, on hot beds, should be kept moderately dry, and the atmosphere also, and the fruits should rest upon pieces of tile, or on slates, and above the foliage. Afford a little air only during the earlier part of the day, and if the weather should become cold, cover the glass at night with mats.

Cucumbers.—Plants that have been bearing a considerable time may be given another thin top-dressing of the same kind of light, turfy soil as that recommended in a previous calendar, viz., three-parts loam to one-part old Mushroom-bed manure. Thin out the old bine, and stop and tie-in the young shoots. Give the roots liberal supplies of tepid water when necessary, and occasionally substitute liquid-manure. Syringe twice on fine days for the present. Cucumbers are heat-loving plants, and when the weather is cold and sunless, fire-heat must be used to maintain the temperature at 70° by night and 75° by day. Afford a little ventilation at the top of the house when the temperature is above 80°, and close early in the afternoon. If the temperature subsequently rises a few degrees higher than 80° no harm will ensue. Cucumbers planted last month, that are now growing freely, must be given frequent attention. Train the leading shoot up the trellis, and if a sufficient number of side-shoots appear from the main stem to furnish each wire, about 10 inches apart, at right-angles to the stem, the leading shoot need not be stopped until it reaches the top; but, if necessary, the main stem must be stopped, in order to obtain side-shoots. Secure a side-shoot to each wire, and stop after the third joint. Thin out surplus shoots, and only lightly crop the plants, as they will not need to fruit until December. Afford fresh soil to the roots, and freely extend the area covered by the mounds, but the depth should not be increased more than one inch at a time. If it is intended to plant for winter-bearing, the work must be done without further delay; for if the plants have not time to become established before the winter, they will not produce fruits.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorset.

Sobralias.—All of the *Sobralias* succeed well in a Cattleya-house or other structure in which is kept an intermediate temperature. Though remarkable for the size and colour of their individual blooms, these Orchids are less popular than they would be did the flowers last a longer period. Where a fully representative collection is grown, however, there will be some of the plants in bloom during the greater part of the year. From the beginning of April to the present time, the following species and hybrids have here maintained a continuous supply of flowers: *S. macrantha*, *S. m. alba* (Kienastiana), *S. m. splendens*, *S. xantholeuca*, *S. leucoxantha*, *S. Veitchii* ×, *S. Princess May*, *S. Lucasiana*, *S. Lindeni*, *S. virginialis*, *S. liliastrium*, *S. albo-violaceum*, *S. Sanderae* ×, and *S. Warszewiczii*. *Sobralias* are very free-flowering plants, and when in vigorous health almost every fully-developed shoot of the preceding year's growth will bloom, producing in succession from three to six flowers; so that a good specimen-plant remains in bloom for a very long time. The plants require considerable pot-room, and those that are suffering for lack of root-space may be repotted as soon as the flowers have faded. Provide them with good drainage, and pot firmly with lumps of fibrous-peat and rough yellow loam, adding a moderate quantity of clean crocks and coarse silver-sand. It is not necessary to raise the plant above the rim of the pot, but when pressing the compost down, leave about half-an-inch of space below the rim, so that water may be easily afforded. It is, as yet, too soon to remove the old flowering-growths, but as each plant becomes thoroughly established they may be cut down to their base. Afterwards tie the newer growths out at a considerable angle from the centre of the pot, so as to give the young shoots plenty of space and light. Plants that do not need to be re-

potted may be top-dressed when the young growths are about 2 to 2½ feet in height.

Oncidiums.—Some of the plants of *O. Krameri* and *O. Papilio* are now in bloom, and will continue for a considerable period to produce fresh flowers from each stem. It is not advisable to prolong their flowering season unduly, or the plants will become weak, and possibly they will dwindle away; remove each spike, therefore, when it has produced three or four flowers. These beautiful *Oncidiums* prefer a light position, and should be suspended from the roof-glass of the Cattleya-house during the summer months; but in winter, the East Indian-house is the most suitable place for them. Both varieties may be grown in basket or pan, and require but a very small quantity of material in which to root.

Epidendrums.—The tall-growing *Epidendrums*, as *E. elongatum*, *E. O'Brienianum* ×, *E. radicans*, *E. arachnoglossum*, *E. crassifolium*, *E. evectum*, *E. Wallisii*, *E. xanthinum*, and *E. Schomburgkii* are growing freely, and will require plenty of root-moisture. Examine the points of the young shoots for scale and mealy-bug. *E. sceptrum* being now in bloom, it should be afforded water very carefully. All the above varieties require a light position in the intermediate-house; while the following tall-growing species, *E. syringothyrus*, *E. myrianthum*, *E. Cooperianum*, and *E. Frederici Guillemi* thrive best in the cool-house, but they require more light than the *Odontoglossums*.

The Cool-house.—Among plants in bloom in the cool-house, *Zygopetalum maxillare* is a very handsome species. This is one of the few Orchids which thrive best upon pieces of Tree-Fern, upon which it is nearly always imported. Dryness at the root at any period is fatal to the plants, and an abundance of water should be poured through the root mass almost every day during hot weather. *Angraecum falcatum* is also flowering in this house; it should be grown in shallow baskets containing but a very thin layer of sphagnum-moss. The intermediate-house is the best place for it during the winter months.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

Lifting the Potato Crop.—The lifting all crops of ripe Potatoes may be proceeded with in dry weather. Having pulled up the tops, turn out the tubers with a digging-fork carefully, not bruising them, spreading them out thinly to dry for a few hours, and gathering them into the Potato-cellar or other store before night-fall. Failing a storing-place, pits may be dug in the soil 1 foot deep, and 4 feet wide, and the tubers placed therein in the form of a ridge, not higher than 2 feet to the apex, covering the heap with bracken or straw, and moulding it over just thickly enough at the first to keep out rain. More can be added when the weather gets cold. In a cellar or store the tubers may be laid about 6 inches deep, and securely screened from the light by some means. Potato-sets should be selected when lifting a crop, and put aside in a frost-proof shed or cellar.

Asparagus-beds.—Asparagus which it is intended to lift and force in pits and frames should now receive a copious application of water, but before affording it, let the beds be hand-weeded, and the alleys hoed and raked. The other beds may receive a slight dressing of salt or nitrate of soda when rain seems imminent.

Winter Spinach.—The drought in some parts of the country has had a bad effect on the last sowings of Spinach, and it will help the plants that have come up, and the germination of seed still in the soil, if a heavy application of water be made forthwith. Keep the beds and lines stirred with a Dutch-hoe, killing weeds, and aerating the soil. The thinning of the plants may proceed as may be found necessary, allowing 7 to 8 inches space, according to variety, from plant to plant. The large-leaved varieties, as *Monstrous de Viroflay*, and *Large Prickly*, which are usually sown for winter supply, covering a good space of ground with their leaves.

Compost Heaps.—The various kinds of composts needed in the kitchen garden should be turned over again, mixing the various ingredients together, and throwing the whole into conical heaps, putting a big label marked with the use it is to be put to with each. Heaps thus prepared are at all times better than when used fresh. This holds good of all kinds of waste materials used as manure, and if such can be afforded copious applications of manure-water, they will be rendered better fertilisers. Heaps of fermenting dung, &c., should be slightly moulded

over, so as to retain the ammonia as much as possible, and if the heaps cannot be sheltered from the rain, a pit should be dug and puddled, or a big tub sunk in the ground near by, into which the drainage may run, it being the more valuable part of the manure, and that which is too often allowed to run to waste. Loam and turf should be carted in, placing it in stack to heat and partially decay before making use of it for any purpose.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Winter-Flowering Begonias.—As the plants are now actively making growth, a little weak stimulant may be given them. Plants which have been in cool frames during the summer should now be placed in a warmer atmosphere. The earliest plants of *B. Gloire de Lorraine* are here showing flower freely, and may be transferred to the greenhouse or conservatory. If extra early flowering batches of this charming variety be required for next season, it will be advisable to cut down a few plants in about a fortnight's time, and they will then produce an early supply of cuttings for the purpose. Do not in any degree crowd the plants, as most of the varieties have highly ornamental foliage, and it is necessary they should be given plenty of room to develop. A slight degree of shade should be afforded the plants during bright sunshine, and if the air continues warm plenty of ventilation may still be given during the day.

Sericographis Ghiesbreghtiana.—A slight top-dressing of good loam with a little Clay's Fertiliser added, will materially benefit these plants. If such a dressing be given them, no further stimulant will be needed for a week or ten days afterwards. Do not permit the plants to become infested with mealy-bug. If any be observed, use a weak solution of paraffin emulsion, and if carefully applied, it will destroy the pest. Use the syringe freely to spray the plants overhead, and maintain a moist warm temperature.

Thysanacanthus rutilans.—Plants may be treated in a similar manner to the *Sericographis*. Afford them all the light possible, and endeavour to produce a strong sturdy growth.

Pelargoniums.—Plants that were cut-back recently, and which have since made growths of an inch or more in length, may be shaken from out of the pots, at the same time removing all the loose soil from the roots. The plants may then be put into pots of a smaller size, using a compost of loam, leaf-mould, and sand, with a sprinkling of bone-meal. Pot the plants firmly, and after the first soaking of water little will be needed until growth has again become active. The plants should be put into a pit or frame, and the atmosphere kept rather close for a few days. Should the plants flag, a little shade may now be afforded them; but when they have recovered from the check, ventilate the frames as freely as practicable, and without creating injurious draughts.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Tomatos.—Now that the hours of sunlight are shorter, the gardener should make use of every ray of sunshine in order to get the fruit ripened, all new growth being removed as fast as it appears, and the remaining fruits exposed as much as possible, but the large leaves retained, as these assist to elaborate the sap, without which the fruit would swell but imperfectly; although where they shade the fruits, it is well to fasten them aside, out of the way. After this date, frosts may occur at night, and a quantity of covering material should be held in readiness to put over the Tomato plants, for they are very tender, and if the fruit gets frozen it becomes worthless. When actual cold weather sets in, the fruit makes no more progress, and it is prudent to cut it off singly, and ripen it in a warm, dry room or vinery. The flavour of such fruits is not so good as that of those which ripen naturally on the plant, but it is useful in the kitchen, when no convenience exists for growing Tomatos under glass. All small fruits, whether green or ripe, may be used for pickling when the plants are cleared of the fruits, as it is only necessary to put them into cold vinegar, with two or three ripe Capsicums, and in a short space of time they will be fit for consumption. When the fruits are all gathered, clear away and burn the plants as soon as possible, thus destroying all spores of fungus and insect-pests, this being especially necessary where the plants have been infested with the white midge, as this always leaves an abundant stock of eggs to perpetuate the race.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, SEPT. 26 { National Chrysanthemum Society's
Floral and General Committee
Meeting.

THURSDAY, SEPT. 29 { Royal Horticultural Society's Show
of British-grown Fruit, at the
Crystal Palace (3 days).

SALES.

MONDAY, SEPT. 26 { Dutch Bulbs, at Protheroe &
Morris' Rooms.

TUESDAY, SEPT. 27 { Dutch Bulbs, at Protheroe &
Morris' Rooms.

WEDNESDAY, SEPT. 28 { Dutch Bulbs, at Protheroe &
Morris' Rooms.

THURSDAY, SEPT. 29 { Dutch Bulbs, at Protheroe &
Morris' Rooms.

FRIDAY, SEPT. 30 { Dutch Bulbs, and Imported and
Established Orchids, at Protheroe
& Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—55°4°.

ACTUAL TEMPERATURES:—

LONDON.—September 21 (6 P.M.): Max., 74°; Min., 54°.

PROVINCES.—September 21 (6 P.M.): Max., 66°, South
Counties; Min., 48°, Shetland.

Fine, dry, absence of rain.

Protection and Shelter. In a recent article we alluded to the question of shelter as a dominant factor in securing the symmetrical growth of trees and in the production of sound timber. A very different picture presents itself on the slopes of the Riffel, and, of course, on hundreds and thousands of similar situations in the mountain districts of Switzerland and elsewhere. The Riffelberg, with its continuation, the Gorner Grat, rises some 10,000 feet above sea-level. In olden times the measurements of mountains and the delimitation of zones of vegetation were made in metres or in feet. Now-a-days the measurements may be made by computing the distance between hotel and hotel!

Thus, starting from the Valley of Zermatt, crowded with hotels, we pass through pastures till we reach the forest, the topmost limits of which (in this particular district) are marked by the Riffel Alp Hotel. Above the forest comes a belt destitute of trees, but rich in alpine plants, mostly out of bloom at

the time of our visit. This zone is roughly marked at its upward limit by the Riffelberg Hotel at an altitude of 8,430 ft. Comparatively few alpine plants grow above this level, though some few reach nearly to the top of the Gorner Grat, the height of which is given as 10,290 feet. The Gorner Grat is surmounted by an hotel, whence a most imposing view of the great mountains which separate Switzerland from Italy is spread out before the awe-struck spectator. Noble as these mountains are, we do not intend to dilate upon their majesty and grandeur, but propose to confine our remarks to the forest belt between the upper level of the lowland pastures, and the lower level of the alpine plant region.

An electric railway just opened conveys the visitor slowly by bold sweeps from the valley through the forest to the top, but although many a glimpse is obtained from the carriage windows, yet to gain a good idea of the forest vegetation it is necessary to traverse the woods repeatedly in various directions on foot. This we have recently had the opportunity of doing, and deeply has the contrast between the sheltered vegetation of Lausanne already alluded to, and that of the mountain side been engraven on our recollection. Let us say that the trees consist mainly of the sweetly-smelling Cembra Pines intermixed with Larch. The undergrowth, the value of which we shall have occasion to refer to later on, consists of *Juniperus nana*, *J. Sabina*, *Rhododendron ferrugineum*, and *Vaccinium myrtillus*. The Pines are mostly large trees of considerable age, and their appearance testifies to the intensity of the struggle to maintain their very existence in which they are engaged. When allowed to grow naturally, the Cembra Pines are bushy-headed trees, very different in aspect from that generally associated with coniferous trees. Apart from external influences they are very variable in habit, often producing giant limbs, which at first run horizontally or with a downward curvature, and then rise parallel in direction to, and not much smaller in dimensions than, the main trunk. The purple cones are placed mostly on the topmost boughs, but this year they are very scarce, which sets us wondering what the squirrels will do for food. Now and then we may pick up a cone from which the seeds have been dextrously removed by a squirrel, but this year, as we have said, there are in this district very few cones for those clever operators to manipulate. While fine old trees are still numerous, yet felling is going on recklessly, and in many areas we estimated that the number of stumps and felled trees exceeded the number of seedling plants coming up to replace those that were cut. Moreover, whilst a few seedlings struggle through the protecting undergrowth, yet they seem to be destroyed by some cause before reaching to any great height; and, as a rule, we found no intermediates between the seedlings and the mature trees. We have then a forest rapidly diminishing. Little or no provision is made for its renewal. The trees in many cases are sickly and yellow, as if likely soon to die. The Cembras, wearied with incessant fight, seem as if giving up the struggle, and allowing the Larch, which better resists the buffets of circumstance, to take its place. But what interesting and striking objects these storm-tossed Cembras present! They are pictorial enough to make an artist rave with enthusiasm, varied enough to arouse the speculations of the botanist, and to excite the curiosity of the forester. Riven by lightning, decapitated

by falling boulders, maimed and mutilated by winter storms and snow, riddled by Pine-beetles, and subject to a hundred other evils, they valiantly struggle to repair the injuries they receive. Thus, while their picturesqueness is beyond description, their mode of growth and adaptation to untoward circumstances are facts which impress the botanist with wonder and admiration, and afford lessons which should not be lost on the practical forester.

The Larch, with its lighter green foliage, contrasts well with the Cembra, and withstands the fierce shock of the elements better than the Cembra. It seems likely to take its place in the near future, a change which may be for the better, for the Larch timber is of more value than that of the softer Cembra.

The value of the undergrowth in protecting the young seedlings has been already alluded to, but that value is greatly lessened by the practice of allowing the cattle and the goats to roam amid the forest to get what food they can. They are pretty enough objects, and the rhythmic tinkling of their bells is pleasant enough, but the injury they inflict on the young trees is incalculable. Our Swiss friends, then, may be earnestly recommended for their own sakes and that of their successors to exclude the cattle from the woods, and to allow a fair chance to the young trees, already face to face with dangers and injuries of all kinds to such an extent that it is clear that in this district the Cembra as a forest-tree is doomed to destruction.

The underwood has not only a value in protecting the young seedlings, but in saving the soil from destruction. This soil is, for the most part, very rich in humus, freely mixed with sand derived from the attrition of the granitic rocks. It is so rich that it looks as if anything would grow in it, and of such texture as to gladden the eyes of a gardener. It covers the rocks often to a considerable depth, and it fills the chinks and crannies which provide homes for an endless profusion of Saxifrages, *Semprevivums*, and other plants. But where reckless felling has bared the rocks, and where the scanty growth has been destroyed by showers of stones hurled from above, or by torrents of water pouring from the melting glaciers above, there the rich soil is swept away, and bare and barren hill-sides are the result. Supposing the communes who own the forests had public spirit enough to adopt a proper system of forest conservancy, and to attempt to re-forest their barren hill-sides, they would in many places have great difficulty in accomplishing the task, owing to the absence of the soil which once covered the now bare rocks.

We may add, that in the woods we have been alluding to, the Spruce is almost entirely absent, thus forming a marked contrast to some other parts of Switzerland, where the hill-sides are clothed almost exclusively with Spruce. This is perhaps due to differences of soil. Another point we may mention, and that is the relative absence of fungi and especially of those injurious to timber-trees. A dry, hot summer, prolonged into autumn, might account for the comparative absence of terrestrial fungi, but could hardly efface the injuries which the fungi inflict on the trees. In any case, amongst the numberless injuries to which the unfortunate Cembras are subject in this district, hurt from fungi seems relatively unimportant.

On the whole, a melancholy feeling attaches to these interesting trees, whose decadence and ultimate extinction, here at least, seem by no means remote.



ESTABLISHMENT OF MR. W. PFITZER, STUTTGART.

The rotting of the stem in Pelargonium. IN the course of the year some examples of decay in the stems of zonal Pelargoniums invariably reach us, the senders mostly expressing surprise at the failure of the plants owing to their cultural requirements having been quite correct.

The causes are very simple, viz., too deep insertion of the base of the cutting, and improper application of water, the disease rarely attacking plants which have got beyond the first year. To avoid such mishaps the gardener should take only such shoots as cuttings as are matured at the base, indicated by the half brownish colour of the rind, and half woody texture of the tissues—soft unripe shoots being carefully avoided. Such cuttings should be denuded of the lower leaves and cut square across, close below a joint, and placed singly 1 inch deep in large 60's, using a heavy, sandy loam, with some coarse clean sand at the base of the cutting, and should be well watered once with a rose water-can, afterwards placing them in cold frames. No more water should be afforded till the earth in the whole of the cutting-pots is dry, when the entire lot should be afforded water in the same manner, and in the early morning in fine weather. We allude here to August-made cuttings.

By the end of September the cuttings will fill the pots with roots, and in October they may be brought into the greenhouse or brick pits furnished with the means of maintaining a minimum warmth of 45° Fahr. In mild weather plenty of air should be afforded the plants, and water only when the whole of the soil in the pots is dry, and then as before with a rose-can, and in fine weather. The position occupied by the plants should be as light as possible, and near to the roof-glass. Little labour is entailed in the winter beyond keeping the plants free from decaying leaves. These plants, if required for bedding, should not be repotted, and late in April they may be stood out-of-doors after being hardened off by full ventilation, taking the precaution to afford them protection against cold at night. Pelargoniums treated in this manner rarely suffer from decay of the stem, and they flower early and abundantly after being planted out in the beds.

Where space is limited, six to twelve cuttings may be placed in larger pots than 60's, in which case repotting in the early spring time, and a short course of treatment on a mild hot-bed till re-establishment has taken place, becomes a necessity.

FRUIT SHOW OF THE ROYAL HORTICULTURAL SOCIETY.—The Royal Horticultural Society's great show of British-grown fruit will take place at the Crystal Palace on Thursday, Sept. 29, and the two following days. Entries should reach the Royal Horticultural Society's office, 117, Victoria Street, S.W., by Sept. 24. On each day of the show, after 10 A.M., Fellows of the society (on producing their tickets) will be admitted to the Palace free.

THE HURRICANE IN THE WEST INDIES.—It is officially announced that the Lord Mayor of London has decided to open a Mansion-house Fund for the relief of the distress produced by the terrific hurricane which swept over many of the West Indian islands, destroying numerous lives, wrecking innumerable habitations, ruining or carrying away crops, and rendering thousands of people homeless and destitute. The formal appeal will not be issued until some further particulars have been received; but donations may be forwarded at once either to the Bank of England or to the Mansion-house. At the moment of going to press, it is stated that a sum of £5000 has been contributed.

THE CINCHONA INDUSTRY OF JAVA.—The British Consul at Batavia, in his last report on the trade of Java, mentions an important development in the Cinchona industry of the island. Java produces about two-thirds of the world's supply of Cinchona, and it has for years been regularly shipped to Holland, where it has been sold by public auction. The large quinine manufactories, which are mostly situated in Germany, supply themselves with the raw material in the Dutch market, and of late years the manufacturers have combined to keep the prices at such a low level as to render the Cinchona cultivation unprofitable, although the manufacturers of quinine have been earning large dividends. To meet this combination it was resolved to establish a quinine factory in Java, and this has been done at Bandoeng, where the first Java quinine has been produced. This is described as of excellent quality and equal in all respects to the best European brands. Some of the planters were tempted early last year by the rise of prices in Europe, consequent on the establishment of the factory at Bandoeng, to consign their Cinchona to Europe rather than to their own factory; but more recently they have seen that this course must result in the destruction of their own factory, and now the latter is being well supported with the local raw material. Some large shipments of Bandoeng quinine have been made to London, and smaller ones to other parts of the world, and the future of Java quinine will depend on the result of these ventures. Last year the total production of Cinchona in the island was over 8½ million pounds avoirdupois.

RETARDING STRAWBERRIES.—We read of a singular experiment carried out on a quarter of an acre of Strawberries by Mr. T. R. DEVINE, of Sullivan County, New York, with the object of prolonging the Strawberry season. The plants were set out in June, 1897, being potted plants which had been kept in a cold store, and they bore a few fruits in September. This, however, is an incident which has nothing to do with the experiment. On January 22 a layer of ice, 16 inches thick, was put on the plants, and in the first week of February a second layer, 14 inches in thickness, the two layers being equivalent to 680 tons put on quarter of an acre. Over the ice was placed a covering of straw, 8 to 10 inches thick, about 7½ tons. The straw was removed by degrees, a portion of the land being uncovered on May 20, and all by June 23, when the plants were found in fine condition. The ground was soon afterwards cleaned and mulched. On July 16 the first Strawberries were picked, and the picking was continued till the third week in August, the chief variety being the Marshall, whose time of fruiting is June in New York State. The yield was said to be greater than on unretarded plants, and the fruits were remarkably fine, and of excellent flavour. It undoubtedly lengthens the season of the Strawberry; but would it pay? Ice is not so plentiful here as in New York State, and the plan would not pay in this country. A cheaper plan would be to retard the plants in pots, in a cool chamber, as is done with Lily of the Valley and other plants, till June, and then place them out-of-doors to fruit. We remember to have heard of a similar plan being adopted, or at least advised, in this country in order to prevent the early flowering of wall and free-standing fruit-trees.

SEEDS FOR THE SOUDAN EXPEDITION, &C.—An apt illustration of the saying that trade follows the flag is afforded by the circumstance that Messrs. JAMES CARTER & Co., of Holborn, London, seed-merchants, have sent out a large assortment of seeds to Sir HERBERT KITCHENER; whilst a parcel has also been transmitted for the expedition coming north from Uganda. Her Majesty's Resident in Abyssinia has recently taken a quantity with him for sowing in that country.

THE OPENING OF PRIVATE GARDENS IN AID OF GARDENERS' CHARITIES.—On Thursday, September 8, the gardens of Ragley, near Alcester, where bedding-out in various styles is managed on a scale exceeding that of many public parks, were thrown open to the public for one day by the kind

permission of R. OLIVERSON, Esq., on behalf of the Royal Gardeners' Orphan Fund, and the Royal Gardeners' Benevolent Institution. Bearing in mind that it was the first occasion on which the gardens had been opened for such a purpose, the small adjacent population, and the tropical heat of the weather (in the gardens 91° were registered in the shade), the result was most gratifying. Leaflets from the Secretaries of both Charities were distributed among the visitors, so that the objects of both will now be more widely known, and gratifying results in subscriptions and donations will doubtless be reaped in the future.

PROFESSOR GIBELLI.—We regret to have to announce the death, on the 16th inst., of this gentleman, who was Professor of Botany and Director of the Botanic Garden at Turin. He was known for numerous publications on the Italian flora.

HOW THE ORCHARD THIEF WAS CAUGHT.—An amusing incident occurred the other evening in the grounds of St. Joseph's Retreat, Highgate, London. It appears that a gardener saw a man in the upper portion of the extensive grounds engaged in "scrumping," i.e., Apple stealing. He informed one of the reverend fathers of what he had seen, and the two went together towards the spot at which the man had been seen. The thief, however, was on the alert, and as soon as he caught sight of them, he made off rapidly, the gardener and the "father" pursuing him. Presently the thief came to a fence, which he cleared, but, as he had not looked before leaping, he dropped into a huge butt of water on the other side. He was hauled out by his pursuers, drenched with evil smelling rain-water, and was given into custody.

PUBLICATIONS RECEIVED.—*Cantor Lectures on Plants Yielding Commercial India-rubber*, by D. Morris, C.M.G., M.A., D.Sc., F.L.S., Commissioner Imperial Department of Agriculture in the West Indies.—*Kew Bulletin*, No. 141, for September, 1898, contains an article on China Grass, and notices of machinery of different kinds used in its preparation; description of New Plants; Notes having reference to Dr. Morris' Appointment as Imperial Commissioner of Agriculture in the West Indies; and on the Insense Trees of the West Indies.—*Mittheilungen über Düngungsversuche*, No. 10, for May, 1898.—*Proceedings and Journal of the Agricultural and Horticultural Society of India.*—*Horticultural Nomenclature*, by F. A. Waugh; published by American Gardening, Rhinelander Buildings, Rose and Deane Street, New York.—*The Agricultural Gazette of New South Wales*, for July, 1898.—*Queensland Agricultural Journal*, Vol. III., Part 2, August, 1898.—*Organographie der Pflanzen, insbesondere der Archegoniaten und Samenpflanzen*, von Dr. K. Goebel. Part II. (Gustav Fischer, Bookseller, Jena.)—*Elizabeth and her German Garden* (Macmillan & Co.)—*Handbuch der Blüten Biologie*, Dr. Paul Knuth (Williams & Norgate).—*Die Alpen Pflanzen in der Garten Cultur*, Von Erich Wocke (Williams & Norgate).—*Sunny Jersey*.

THE SEED TRADE.

THE GRASS AND CLOVER CROPS.—Advices which have come to hand from the seed districts of Darmstadt show that after an extremely mild winter came favourable weather in early spring, and all growing crops looked quite promising, until the summer came in, bringing with it heavy cold rains, which did injury to the maturing plants, discolouring the seed, and delaying the harvests for many weeks. Long exposure to moisture has materially affected the germinating power of various seeds.

Agrostis.—The two forms of the Bent-grass (*Stolonifera alba* and *vulgaris*) have yielded an abundance of good seed, both in Germany and the United States, and it is expected that prices will be lower than for some years past.

Aira.—The Waved Hair-grass (*A. flexuosa*) has yielded a good crop of fine seed; and the same holds good of the tufted form (*A. caespitosa*).

Alpecurus.—This year's crop of the Meadow Fox-tail grass (*A. pratensis*) is one of the best for some

time past, as far as quantity is concerned, while the quality is good, but as full of impurities as usual, while a "red larva" is mixed with it, making a careful selection necessary. The loss in cleaning is large; still, some fine seed will be obtainable at moderate prices.

Anthoxanthum.—The common Sweet Vernal grass has furnished only a moderate crop of seed of heavy weight; and the same holds good of a form of Sweet Vernal-grass known in Germany as *A. Puelii*. The tall Oat-grass (*Avena elatior*) is smaller than that of last year, but it is of fine quality; it is, however, not expected there will be any great advance in price. The Yellow Oat-grass (*A. flavescens*) is very scarce, and high prices are expected to rule.

Dactylis glomerata (Cocksfoot) is reported to have yielded a smaller crop of seed than usual in New Zealand, and good prices are obtained for fine, bright, heavy seed; the bulk of the season's yield is of indifferent colour, and its germinating power not so good as could be desired. American Cocksfoot is both impure and light in weight; some good samples have been obtained in Germany, but they are not so pure as could be desired.

Cynosurus cristatus (Crested Dogtail).—Abundance of seed has been obtained of good weight, but samples have suffered in point of colour, and there is an absence of the bright golden-coloured seed so much preferred.

The harvesting of the Fescue Grasses coincided with the worst of the wet weather experienced in the district; and while a large quantity of seed was saved the quality is unsatisfactory, stained, and in the case of the rough seed it is much mixed with weeds. Prices are expected to be lower than those of last year. The harvest of the narrow-leaved Fescue (*tenuifolia*) is very much smaller than last year, and it is expected the best samples will realise high prices. The Tall Fescue (*elatior*) has been harvested in the Rhine country of excellent quality in large quantities, and the prices are expected to be lower than those of last year. Meadow Fescue (*Poa pratensis*), seems to have given a smaller crop than has been obtained for many years; this is confirmed by reports from the United States of America. Large portions of the lands on which it was being cultivated have been ploughed up, because not worthy being harvested, and the yield is thereby reduced. Still, estimates vary, but it is certain prices rule higher at this moment than they have done for years. Fine samples are said to have been obtained from the Rhine lands.

The perennial Darnel Grass (*Lolium*), and the Italian Ray Grass (*L. italicum*), have both been produced in abundance and of fine quality, and prices range low. *L. italicum* is strikingly distinguished from the other forms of *L. perenne* by the long slender awns of the flowers, and it is a doubtful species.

Timothy Grass (*Phleum pratense*) is said to have been an abundant yield in the United States, and prices are low there. The German crop is backward. The Wood-meadow Grass (*Poa nemoralis*) is a smaller crop than last year, though the seed is heavy and well developed, but the colour is not good. The smooth-stalked Meadow-grass (*P. pratensis*) is reported a short crop in the United States, and prices advance, but the quality is exceptionally fine. The rough-stalked Meadow-grass (*P. trivialis*) is a small crop, the acreage having been considerably reduced within the last few years; prices are certain to increase.

Clovers.—It is reported of all Clovers that the crops suffered more or less from the weather, with the exception perhaps of Alsike and White Clover, of which there are good yields. Sainfoin has, so far, only appeared in moderate quantities, and it is too early to pronounce a definite opinion as to the possible yield. The crop of Trefoil is said to be smaller than that of last year, though moderate prices prevail; the quality of the seed is somewhat indifferent in regard to development. The Italian crop of Lucerne has suffered severely, and is very indifferent both as to quality and quantity; and the same is reported in reference to the yield from Hungary; but prospects are better in Provence.

The harvest is generally late. Of Red Clover there appears to be but a limited crop in Germany; unsatisfactory reports have come from all the Rhenish Clover districts. It is the same in Silesia and Bohemia; and there is a small yield in Russia. From some parts of Hungary better reports are coming in, but as the results are not yet complete, nothing certain can be ascertained. Some samples of new Bohemian and Hungarian seed which have come to hand, show small grain of indifferent colour. *Pisum*.

AMERICAN NOTES.

QUEBEC POMOLOGICAL SOCIETY.

THERE are a great many state and provincial horticultural societies on this continent, and nearly all of them are strong and useful societies holding enthusiastic and valuable meetings once or twice a year. It is always a delight and a profit to me to attend these meetings whenever and wherever I can, but a special interest attaches to such a meeting as that recently held by the Pomological Society of the province of Quebec. As a whole this province is north of the generally-accepted fruit-growing zone. The methods and the varieties which are everywhere else more or less successful among Apples, Pears, Plums, and other temperate latitude fruits, cannot at all be depended on in Quebec, but in spite of this fact, the energetic land-owners of the province have been steadily developing varieties, and working out a system of fruit-culture of their own. For example, at the recent meeting, Mr. W. W. Dunlop, Secretary of the Society, exhibited a large collection of Plums many of them seedlings of his own growing, and much hardier than varieties in general cultivation. Some of these were of excellent quality, and find ready sale in the Montreal market. His seedlings were chiefly of the "domestica" type, though he is reported to have given it as his opinion that the type best suited to the climate of Montreal is the native *Prunus americana*.

The President, Mr. Auguste Dupius, in his address, announced the establishment by the provincial government of several fruit experiment stations, where many different varieties of fruit will be tested as to their adaptability to different parts of the province.

Many other valuable discussions were held at this meeting. One of the liveliest was as to whether Apple orchards should be kept under cultivation, or should be seeded down to grass. Another dealt with the preservation of Grapes over winter. Extended practical orchard notes were given. These meetings are held semi-annually in different parts of the province, and have a considerable influence in arousing an interest in fruit culture, and in disseminating a knowledge of proper horticultural methods.

THE HORTICULTURAL CLUB.

A small coterie of horticultural teachers and experimenters met in Boston last winter, and decided to organise a Horticultural Club. We all thought at that time that this name was new in its simplicity, but we soon remembered that London has long had its Horticultural Club. Ours is somewhat different in plan and organisation. It is intended that the membership of this club shall be quite limited, and that it shall comprise, for the most part, the teachers of horticulture in New England or within easy reach. A simple constitution was adopted at a meeting recently held in Boston, and Professor B. M. Watson, of Bussey Institute, Harvard University, was made president; and Professor W. M. Munson, of the University of Maine, secretary-treasurer.

AILANTHUS GLANDULOSA.

I wonder if this odd tree has found as many friends in Europe as in America. It seems to be hardly about as far north as northern New York. I have recently seen some good specimens loaded with fruit in Ithaca, N.Y. The tree was extensively used in some of the timber planting experiments on the great plains of the Mississippi valley, where it developed some few good points. It was a rapid grower, and made fence posts rapidly, though it has never

shown itself suited to the production of large timber. In that strange old town of Salt Lake (Utah) there is a fine row of *Ailanthus* about the Temple Square, where, amid other odd surroundings, they make a very agreeable impression on the visiting stranger. In a few places I have seen *Ailanthus* planted in groups or borders, or for screens, where it was cut back to the ground every two or three years. Treated in this way the effect is very fine.

GOSSIP.

Professor J. L. Budd, for many years in charge of the horticultural work in the Iowa Agricultural College, and notable for his connection with the spread of Russian fruits in this country, has resigned his position. Professor John Craig, formerly horticulturist at the Central Experimental Farms, Ottawa Ont., has been elected to succeed him. Professor Bailey has just returned from a vacation in Europe. Professor B. E. Fernow has resigned his place as chief of the forestry work in the U.S. Department of Agriculture, and has taken charge of the new school of forestry at Cornell University. Mr. Gifford Pinchot takes Dr. Fernow's place in Washington. Many papers of considerable horticultural interest were presented at the recent meeting of the American Association for the Advancement of Science at Boston, and also at the meeting of the Society for the Promotion of Agricultural Science. These papers will all be duly accessible in the publications of the respective societies. *F. A. Waugh*.

CACTUS DAHLIA "FANTASY."

(FIG. 65).

AT the meeting of the Royal Horticultural Society held on September 6, a very pretty variety with threadlike florets, incurving at the upper end in a confused manner and of a scarlet colour, was remarked in a collection of Cactus varieties shown by Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley. It is figured as a distinct novelty.

HOME CORRESPONDENCE.

STREET TREES IN BATH.—The residents of Bath are concerned about the trees in their Pulteney Street. Some of them are certainly in a parlous state. They are of varying sizes, the Planes being by far the largest, and they appear at irregular intervals. The City Council have been discussing what is best to be done; some are in favour of filling up the gaps in the line on either side, others favour the more sensible plan of removing the trees entirely, and planting young ones in the autumn. Pulteney Street is bounded by lines of houses of a pattern of one hundred years ago, severely formal in their primness, and needing such relief as trees afford. Along the sides of the street can be seen Planes in clean and vigorous leafage; Sycamores in a deplorable condition through the ravages of insects and other causes; Poplars and Limes which have well-nigh shed their leaves; and mop-headed Acacias. The Planes have grown out of all proportion to the size of the others; and the Robinias, which are the youngest and smallest, do remarkably well, and have dense heads of green leaves. It would be best to replant, using either Planes wholly or Robinias wholly. The present trees stand just along the verge of the road, and not on the pavement, as is generally the case. One advantage gained is, that through the trees being near the channels by the roadsides, there is greater certainty of rain reaching the roots than when they are planted on the pavement. The Mop-headed Acacias seem to harmonise with the style of architecture of the houses, and the green of their leaves appears to be both more striking and persistent than that of the Planes. Street planting appears to have been perfunctorily and injudiciously performed in some of the main thoroughfares of this delightful western city, and a good opportunity is now afforded to replant Pulteney Street, and establish a standard of selection and planting. *H. D.*

THE ROYAL HORTICULTURAL SOCIETY'S FRUIT SHOW.—"H." is in too much of a hurry. My remarks were directed not to the full schedule of the Society, but to a supplemental one dealing as I stated with the Special District County Prizes for Fruit, and which has been largely circulated by itself as a

separate sheet, apart from the general schedule, and especially to provincial newspapers; and it was owing to coming before me in an editorial capacity that I was led to pen the remarks you published on the 10th inst. The two points I raised are legitimate and necessary matters for discussion, as they are involved in some obscurity. *Cor.*

RUDBECKIA BICOLOR, NUTT.—As the introducer of this species some twenty-two years since, you will perhaps allow me to state, in reference to R. Dean's enquiry, that there can be no question of its annual duration, and as little that the interesting new variety *superba*, which, it may be stated *en passant*, is a wild form, and not a garden variety, shares this character with the type. It appears to vary considerably in its coloration, some of the plants having the base of the ray-florets spotted with rich deep brown, the spots varying much in size. In other specimens the colour is more or less diffused over the entire ray, and is of a dingy shade. The

that its constant misuse demands a strong protest. It is not too much to affirm positively that in the hundreds of gardens, great and small, that I have seen lately, blue *Lobelia* is used as an edging to three-quarters of the beds that are filled with summer bedding plants, and yet there is never a broad mass of rich blue to catch the eye and fill it with a sense of repose! Take even the London parks, where sometimes one sees what wonders really good taste can work, and yet, how often will you see a bed edged with blue *Lobelia*, which not only "swears" generally with the flowers it surrounds, but invariably disturbs the eye where it touches the green grass. Modern milliners no doubt have been busily trying to persuade us that grass-green and a hard blue are fashionable as a combination, but they cannot convince us it is good taste and a thing to be admired. What a pity then it should be so constantly reproduced in our gardens! A really pale shade of blue is beautiful on grass, as the spring *Forget-me-Nots* show us, but the fully

now vulgarised by a constant repetition of reds, yellows, and blues! and what a satisfaction it would be if anyone would just plant half his garden in the way I have indicated, and the other half in the usual blue-edged uniform. I feel sure the difference in beauty and brilliancy would be so great that another year I should have converted him from the error of his ways! *E. H. W.*

KEW GARDENS.—These beautiful gardens are a credit to the nation and to those who manage them, and are also a boon to the general public, making Kew and the neighbourhood an attractive residential district. As a public park for the masses, Kew is unrivalled. As a botanical college for students and scientific gardeners, it perhaps cannot be surpassed. The question, however, to ventilate is, does it spread among intellectual people generally as much botanical knowledge as it might be made to do, considering the great teaching facilities the gardens afford? The museums in the gardens are crammed with exhibits and curiosities carefully labelled, collected from all parts of the world, and these are viewed by hundreds of people, though only as curiosities. A student going in for a course of botany for scientific purposes, medical or otherwise, no doubt finds all he requires at Kew in the way of help. If you send a plant or product to the Curator it will be named for you, and a courteous letter sent in reply. This applies to the British Isles, the colonies, and other countries, and no doubt the gardens benefit somewhat by this foreign correspondence and exchange of information. The other day the writer was at Kew Gardens, and saw an English herb among the medicinal plants, and he wished to know where he could gather this plant growing wild to use for medicinal purposes. He was, however, unable to get this simple information. He saw a gentleman in authority who was courteous enough, and said he had gathered the plant, but he could not recollect where it was to be found. The writer asked—Was there no library of botanical books that might be referred to? He said there were such books in the Herbarium, but only students were allowed there. The writer found from further questions it was like pumping at a dry well, but this gentleman said the botanical books of reference could be got at the British Museum Library, or the Curator of Kew Gardens could be written to. Undoubtedly there must be a distinction made between the student proper, who is studying to make botany or gardening a business, because these students are working practically as men work at a University, and their studies at the Herbarium should not be disturbed by amateur botanists or rudimentary enquirers. But one would think that if an enquirer wanted to know the habitat of an English plant, so as to gather it, an enquiry at Kew Gardens would enable him to ascertain such simple information. Perhaps it is too simple, and too unscientific, as to be beneath notice. It would be useful if there was a small reference library of botanical books at Kew Gardens for the use of the general public, where one of the advanced students in turn could officiate. No doubt it will be said, nobody would use it. The public would use such a library if made acquainted with it, and it was not hidden away in a hole-and-corner position. People who do not keep a scientific gardener at times want advice as to the selection of plants; why should they not go to Kew for such advice? Kew people might thus widen the growth of many plants now neglected or unknown. This would not hurt the nursery people, but rather quicken their trade. It is suggested as desirable to add on to the present teaching at the gardens a popular side as well as the present scientific side. *Edmund B. Ivatts.*

BLIND STRAWBERRY PLANTS.—A good deal has been written recently in these pages about blind Strawberry plants, but here is a phenomenal lot. When I came into this small place in August, 1897, I found some Strawberry plants with numerous runners, so in the following autumn I planted four rows of these young runners on raised ridges. They grew very well. In the spring I manured one row, but not the other three. In the hollows between the ridges, however, I put a good layer of seaweed. In the ordinary fruiting season each plant was simply a bush 2 feet across, but without a single flower! There was no difference between the one manured row and the three unmanured rows. In all, the plants made a splendid growth, with numerous and never-ending runners. What the real cause of this utter blindness is, I must leave for experts to imagine. The soil here is very good. As I did a good deal for these plants, and as they did nothing

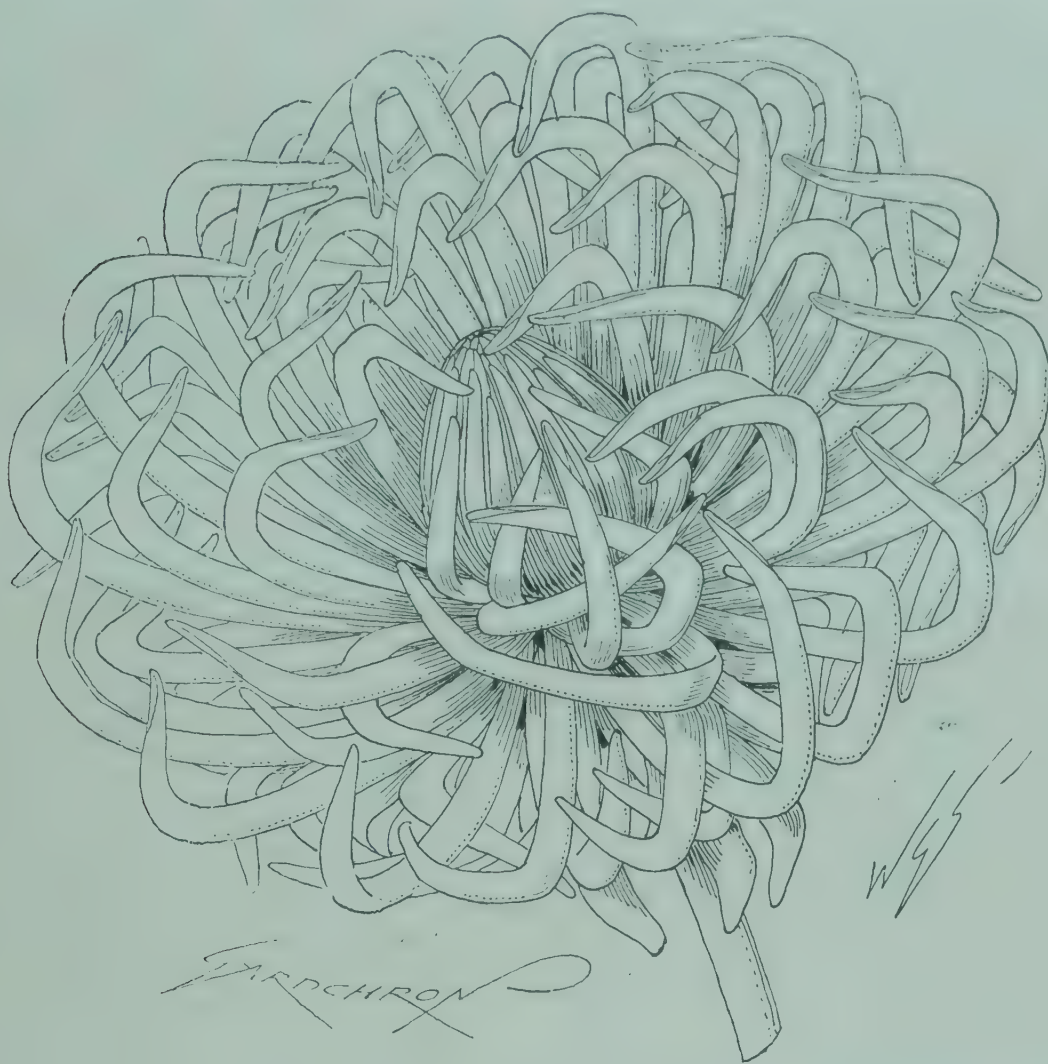


FIG. 65.—DAHLIA "FANTASY": COLOUR BRIGHT CRIMSON. (SEE P. 238.)

best forms are certainly very handsome. The so-called *R. texana* referred to in the same note, is properly the *Lepachys columnaris* var. *pulcherrima*, A. Gray. It may be treated as a half-hardy annual, but will often survive several years under favourable conditions of soil and climate, and might therefore fairly enough be exhibited as a perennial. *W. Thompson, Ipswich.*

THE ABUSE OF BLUE LOBELIA.—At this season of the year, when the summer bedding-out is at its best, how often is the effect of what would otherwise be a brilliant and tasteful garden entirely spoilt by one plant, and that a very pretty one in itself! A few years ago men of taste and perception protested loudly against the over use and wrong use of the *Pyrethrum* Golden Feather, which, save in spring-time, is really a plant to be avoided rather than planted for ornament. Thanks, no doubt, to folks' eyes being opened, one sees comparatively little of this plant now, so I need say no more about it to-day; but the blue *Lobelia*, the plant to which I now prefer the grievous charge of spoiling many a pretty garden, is so charming in itself,

rich blue of *Lobelia* next green grass, next red, or next yellow is atrocious, and yet how rarely is it otherwise used! Do let us stir up those who have eyes to see and tongues to talk, to protest against this misuse of blue *Lobelia*, which is really at the root of the dislike to summer bedding, which is growing day by day on account of the carelessness and bad taste so often displayed by those who should know better. Nothing is more charming than a broad mass of blue when properly treated, but full rich blue absorbs so much light that it requires plenty of white, or still better, cream-colour to set it off. There are now plenty of dwarf white-flowered or creamy-foliaged plants suitable for edging blue *Lobelia*, why not use them for an edging, and put the blue inside? A rich orange, or a tawny-brown flower, such as *Gazania*, or brown *Calceolaria*, make most effective contrasts near blue when the latter is edged with a creamy-toned plant. *Echeverias* with their bright flowers left on are particularly suitable for edging *Lobelia*; white and blue in mixture, or white grouped or dotted on blue is always admissible. What a relief to the eye would be a good mass of blue and white as a central object in small gardens,

for me, I uprooted them all, and made them over to the rubbish heap. *E. Bonavia, M.D., Worthing, September 8, 1898.*

LIATRIS SPICATA.—Familiar as are the tall spikes of purplish flowers of the *Liatris* in the hardy plant borders, but few are aware that both *L. spicata* and *L. pycnostachya* (Kansas Gay Feather) make very useful and showy pot plants for using in the decoration of the dwelling-house or for the conservatory. They may be grown in small pots, and their flower-spikes, rising some 3 or 4 feet, render them very useful for indoor decoration, especially where the width of the arrangement is restricted. In more massive groups they form telling objects, with their spikes standing above the group alternately with the slender spikes of the white *Francoa*. A number of them are grown in pots for decorative purposes by Mr. P. McArthur, of Maida Vale, London. *J. O'B.*

CROWN FORESTS.—Mr. A. C. Forbes, in his communication relating to this subject (p. 213), has surely forgotten that the figures relating to the financial results of the Crown Forests are published every year. *D.*

MONTBRETIAS.—Referring to Mr. Martin's additional notes in your last issue on the cultivation of Montbretias, I contend it is quite unnecessary to ripen the bulbs over hot-water pipes, and to nurse the bulbs in frames, instead of planting them again directly. If planted at once, there are very few of the small bulbs that would not flower the following summer. My opinion is, that if the bulbs are dried off in the autumn, and then placed in boxes and started in a frame in February and planted out in April (as advocated by Mr. Martin), they would then have made 5 or 6 inches of growth and a quantity of roots, which would be damaged and receive a check when planted. They could not possibly do so well as autumn-planted bulbs, which would then be well established and pushing through the soil (especially so in the event of a spell of dry weather). I imagine that very few of the many successful cultivators of Montbretias practice this ripening-off system recommended by Mr. Martin. *T. F. Conway, Ham House, Richmond.*

BAD SETTING OF GRAPES.—A short time ago I was asked to look at a vinery planted with Lady Downes seedling Vine, on which the bunches had set very badly. I have thought a great deal about it since that visit, wondering if we have quite understood the cause of this, and other varieties of the Vine, amongst others, Muscat of Alexandria, and other Muscats, Mrs. Pince, Black Morocco, &c., often producing small undeveloped berries. Many reasons have been given for this, such as lack of ventilation, heat, &c., but I am not prepared to criticise the common methods of practice at the time of the setting of the fruit. The good or bad setting properties of the different varieties of Grapes have also been attributed to the position of the anther heads around the stigma, those which set their fruit badly having their anther-heads deflexed from the pistil, and those anther-heads of the free-setting varieties standing quite erect. I think we may now fairly consider this matter still further. Kerner and Oliver (*Distribution of Sexes*) have extended the Phanerogamic classification of plants of the division of sexes, viz., hermaphrodite, monœcious, dioecious, and polygamous flowers, and placed them in fifteen different groups, according to their fertilising properties. The Grape-vine they evidently place in two, or perhaps three of these groups. 1st, Group X., which embraces those varieties which develop true hermaphrodite flowers on one plant, and pseudo-hermaphrodite female flowers on another, as here the cultivated Vine (*Vitis vinifera*) is distinctly mentioned. 2nd, Group XI., in which are placed those plants which develop true hermaphrodite flowers on one plant, and pseudo-hermaphrodite male flowers on another. "Many species of Vine" are here mentioned, but on a previous page (Vol. iv., p. 295), in speaking of the varied gradations in the class of pseudo-hermaphrodite pistillate and staminate flowers they say of the Vine (*Vitis vinifera*) in conjunction with other plants:—"All develop imperfect flowers, which are liable to be mistaken at first sight for truly hermaphrodite. They have plain, well-developed ovaries and stamens, in whose anthers pollen grains are formed in greater or less numbers; but experiments with this pollen have shown that when deposited on the stigma it emits no pollen-tubes, and consequently the flowers are not in reality truly hermaphrodite, but only apparently so." This does not seem to me to be very clearly expressed with

reference to the Grape-vine, especially in Groups X. and XI. We know in practice that many bunches in themselves produce fully-developed and imperfect berries also, and there are few indeed, however well individual bunches may set their fruit, but what produce some imperfect berries. Group XV. gives "Three kinds of flowers, distributed in four different ways on different plants, so that they can be divided into four varieties." A species of Vine (*Vitis cordata*) is mentioned here. If this would apply in the case of our English hothouse Grapes, it would perhaps simplify matters very much. At any rate, in practice we know that, pollinate as much as we like, and in whatever way we like, in some varieties some of the bunches will still set their fruit very badly. Whether the ovaries are imperfectly developed, or whether the pollen grains will not emit pollen-tubes, on the same or on different plants, the results are still the same. Some rods, and even some branches on the same rod, develop their fruit much better than others, and it might possibly become a consideration whether a proper and judicious selection of eyes for propagating purposes, might not greatly influence the setting properties of our "badly setting" varieties of Grapes. P. [The forms of the perfect hermaphrodite and the imperfect hermaphrodite flowers are shown in Mr. A. F. Barron's *Vines and Vine-culture*, which indicate how fertilisation takes place with facility with the former kind of flower, and how difficult and uncertain it must necessarily be in the latter, owing to the shorter and deflexed anthers. Ed.]

FLOWERS OUT OF SEASON: WHY NOT.—I read with a good deal of interest the very sentimental protest on "Flowers Out of Season" in your issue of September 17, and am glad that my love of the beautiful in Nature is not confined to such time limit as our variable climate naturally imposes. To us poor London dwellers, who have no opportunities to daily watch the opening beauties of woods, fields, and gardens, the full-blossomed fragrance of summer, or the varying tints of ripened autumn, the poetry of Nature loses much of its charm, and we have to content ourselves with our favourites of the floral world when they are brought to us. To one a Lily, to another a Rose, to a third a Carnation, is an especial subject of delight, and we make up for the successive beauties the countryman enjoys, by asking daily for supplies of a particular kind of flower that we welcome all the year round, without regard to methods of production. Much as we admire the Love of Nature, so evident in the tender and touching poetry of dear old Burns, and much as we delight in rural scenes and sentiments, when for a few days we have the opportunity to indulge in them, I really cannot see any logic in connecting Burns's regret over a crushed Daisy with forcing flowers for market. Why not protest against the mower who cuts off millions of Daisies, or the seller of naturally-raised posies? Had Burns been a Londoner, and visited Covent Garden, I question if his delightful song in praise of flowers would have gone beyond the pure enjoyment of them, and I doubt very much if the man who prolonged the period during which their beauties could have been enjoyed would have come in for the wholesale condemnation the writer supposes. Then, how about other forced and unseasonable articles of commerce. Are we to destroy all our greenhouses, and have nothing but natural productions? If I may grow Grapes all the year round, why not Lilies and Roses? If "a thing of beauty is a joy for ever," why not for ever grow that thing of beauty? But says the protestant, this forcing is destructive of the plant! well, doubtless the Laws of Nature cannot be strained with loss. How many millions of humanity live in our London under hothouse and forced conditions, and what remedies are effectively carried out for their being transplanted into more free and naturally healthy surroundings? If sympathy and sentiment are to be exerted that flowers shall not be forced, why stop at flowers? Why not extend to human seedlings? Why not begin there? Then with regard to the dust-heap as the premature grave of forced flowers. Are forced flowers the only ones to be so consigned? Is not the faded flower commonly quoted as an emblem of our own frail mortality? But I think I have heard that forced flowers properly managed keep even better in London dwellings than naturally-raised ones; so, if flowers for decorative purposes may be cut at all, the argument is in favour of forcing. Then, again, the story of Nansen's birds, if rigidly applied, seems to show that after a prolonged absence the heart more fondly hails the re-appearance of old familiar faces. Truly, absence makes the heart grow fonder; then, to be

logical, we ought to retard the growth of flowers to better enjoy their re-appearing. Well, this is just what is done with the Lilies of the Valley which are marketed in August. They are cased up in ice for a long period, as Nansen was; yet are we forbidden to welcome them because the climate they have been living in was arctic? To be consistent, we ought to feel more ecstasy over these delayed reminders of "life and spring." Now, Sir, much as we should delight in the opportunities happily enjoyed by the writer of your "protest" article of watching Nature's efforts, we cannot but think that, were he otherwise circumstanced, he would hail with delight at all times and in all seasons such of Nature's sweetest and best gifts as man can collect for him without limits of season or climate. We live in an age when means of locomotion annihilate distance, and when all the products of the earth can be enjoyed by rich and poor almost regardless of season. We Londoners think this a great blessing, and our appreciation of it is shown by the way in which the markets where such products are brought for distribution are patronised. To say that an English cultivator shall not enter into competition with a foreigner because, forsooth, he has to create a different climate to that which Nature provides, is to put a stop to progress and a limit in production which, thank God, it is quite impossible for sentimentalists to accomplish; indeed, to my mind, the bare idea is preposterously absurd. No individual can claim a monopoly of sentiment for flowers. Let us have them at all times and at all seasons—all the "Gems that in earth's firmament do shine"—if we can get them, whether they be Orchids from equatorial regions, sweet-scented beauties from the Riviera brought to our doors, Narcissus from the Scilly Isles, natural flowers from English gardens, wild flowers from English hedgerows, or the much-despised forced flowers, which at present form the staple of the London flower-trade; as well as those foliage-plants which assist in the ornamentation of London homes. Nothing so much demonstrates the value of our modern education, and the advance in national taste and refinement, as the increasing love of, and demand for flowers. Let us hope that the douche of cold water so lately poured over them may have no effect in diminishing their supply and use. *A Lover of Flowers.*

VEGETABLES.

THOSE who require a first-rate early Marrowfat Pea should sow Early Morn. It develops quickly, and has large pods. Plants from spring sowings come into bearing in about eight weeks. Such quick-growing Peas are excellent for small gardens, or where the cropping has to be very close, as they allow of two or three crops to be grown on the same piece of land in one season.

THE BRITISH ASSOCIATION.

BIOLOGICAL EXHIBITION, ZOOLOGICAL GARDENS, CLIFTON.

It was determined, on the suggestion of Dr. Harrison and Mr. E. J. Lowe to add to the attractions of the British Association meeting, by holding a biological exhibition of animals and plants. This exhibition was arranged as a museum; there was no competition, except a few classes for cut blooms, i.e., wreaths, bouquets, &c., which were judged by ladies, under the presidency of Lady Llangattock; exhibitions in each department consisting of the various classes of plants, flowers, fruit, and vegetables, together with hybrids and crossed varieties. Lord Llangattock was the President, and Sir John Lubbock opened the show. The best growers in the different classes were selected, and with one or two exceptions all responded to the appeal.

The especial object was to do something worthy of Bristol that would induce others to aid in starting a biological station for work in aid of agriculture and horticulture, by the investigation of biologists, physiologists, and chemists, in order to find out improvements for the benefit of the farmer and the gardener; to make new crosses in animals and plants, calculated to increase productiveness and beauty. With the farmer, it is important to increase the produce of corn and grass, &c., and this at a moderate expense; with cows, to increase the quantity and quality of milk, by cross-breeding. Mr. Richard Stratton is crossing Keries with a Shorthorn bull; Mr. E. J. Lowe Jerseys and Shorthorns with a Dexter bull; testing the effects both through the male and female, treating them as the seed-bearer in plants—and illustrations of them were exhibited. These and other branches of enquiry require work in a biological station, and we hope that Bristol will be one of the first to commence these important experiments.

Commencing with the plants, Messrs. Kelway of Langport showed 150 spikes of magnificent Gladioli, for which they received a certificate, as also for three seedlings named Lady Llangattock, Mrs. Harrison, and Mr. E. J. Lowe.

Lord Llangattock had a collection of hot-house fruit (T. Coomber, gr.). It would be impossible to excel the quality of this collection, Pines, Grapes, Melons, Peaches, Nectarines, &c., were all equally good, and well deserved the certificate. The Marquis of Bute (A. Pettigrew, gr.), had another group of fruit, his collection contained a fine display of enormous Apples and Pears, Melons, Grapes, Peaches, Nectarines, &c., for which he received a certificate, and another for his seedling Melon, and a third for wine of 1885 and 1887 from the Glamorganshire vineyard.

Mr. John Basham, of the Bassale Nurseries, near Newport, showed fifty dishes of Apples and Pears, and pyramid fruit-trees loaded with Apples—such a wonderful exhibition shows what can be accomplished in Monmouthshire; these were backed by a collection of Pompon Dahlias. Certificates of Merit for the fruit, and also for the admirably trained pyramid Apple-trees.

Mr. Vincent St. Ames, Cote House, Clifton (gr., W. H. Bannister), was selected to represent vegetables; his abilities in the growth of fruit and vegetables are too well known to require mention that he well won the certificate; his collection was large and of excellent quality, and to these he added Peaches, Nectarines, Figs, Apples, and Pears.

Messrs. Dobbie & Co., Rothesay, had a large and choice collection of Cactus Dahlia, for whose excellence and effective arrangement a certificate was awarded, as also for varieties Arachne, Night, Daffodil, and Britannia.

In the large plant tent, Messrs. Veitch, of the Royal Exotic Nursery, Chelsea, had a grand display of Pitcher-plants and Sarracenias, and also hybrids, amongst which were *Lutlo* × *Cattleya* var. *callistoglossa ignescens*, and many *Dendrobiums* and *Cypripediums*. Twenty-four lovely hybrid *Rhododendrons* (*javanicum* × *jasminiflorum*), *Nepenthes* hybrids (with both the parents shown), *Anthurium Andreanum* hybrids, *Anthurium Rothschildianum*, *Bertolonia* hybrids, eighteen *Canna* hybrids, *Begonia Eudoxa*, with parents; *Streptocarpus* hybrids in great variety.

Hybrid Ferns, with their parents—amongst these was one marked *Polypodium Schroderi* (a cross between *Polypodium vulgare* and *P. aureum*), which was much admired, and received a certificate, as did also the Pitcher-plants, hybrid *Rhododendrons*, and hybrid *Cannas*. Such a collection had never been seen in Clifton before. Mr. F. W. Moore, Glasnevin, had a certificate for a very choice collection of twenty-four distinct *Sarracenias* from the Royal Gardens, Glasnevin.

Mr. F. W. Burbidge, Royal Botanic Gardens, Trinity College, Dublin, exhibited an exotic Dockweed, *Azolla filiculoides* (certificate); and Mr. James Moly, Langmoor, Charnmouth, received another for *Azolla pinnata* and *Pontederia crassipes*. Mr. C. Bucknall, Clifton, obtained an award for coloured drawings, and Mr. Wollaston, for a specimen, a new British plant, *Stachys alpina*, first found in June, 1897, at Wootton-under-Edge.

Mr. Cypher, of Cheltenham, had a collection of choice plants arranged for effect, which occupied the whole of one side of the centre of the great tent, amongst which were *Lælia* × *Cattleya* Cypheri, *Bougainvillea* Cypheri (new, and gaudily coloured), *Acalypha Sanderi* (new), and many fine *Crotons*, *Palms*, *Bamboos*, and *Ferns*. This collection was very effectively arranged (certificate).

Messrs. W. & J. Birkenhead, Fern Nursery, Sale, showed a collection of 500 exotic Ferns (certificate), a collection of British Ferns (certificate), and also another for a remarkable *Polystichum plumoso-divisilobum* named *plumosissimum*, with fronds covered with a growth resembling the fertile fronds of a *Selaginella*, which possibly may be due to apospory.

Mr. Joshua Saunders, of Sutton House, Clifton, arranged for effect a choice collection of Orchids, foliage plants, &c. The arrangement was considered perfect, and did great credit to his gardener (certificate). Mr. Garaway, of Clifton, also took a certificate for another arranged group.

Mr. E. J. Lowe, F.R.S., Shirenewton Hall, Chepstow, exhibited a collection of about 200 hybrid and crossed varieties of British Ferns, many of large size. These were examined and reported upon by Mr. Moly and Mr. Birkenhead. Mr. Moly was selected as one of our oldest British Fern authorities, who has for many years had a large collection of found plants at Langmoor, near Charnmouth. Mr. Moly stated it to be the finest collection ever brought together, and it was awarded a certificate. Other certificates were awarded for thirty-six different varieties of "multiple-parentage of *Scolopendriums*;" for *Polystichum angulare* var. *Mayi* Micklethwait, adding "this is the finest British Fern yet raised;" it is one of the *plumoso-divisilobes*, not only is it imbricate, but the imbrications lie one above the other in long curtains; for hybrid *Scolopendrium* "Prof. Marshall Ward"; for *Scolopendrium vulgare* (a crispum) Mrs. Doughton; for *Polystichum angulare* var. *Sir John Lubbock*, another of the *plumoso-divisilobes*, remarkable for its great breadth; for *Scolopendrium* hybrid Lady Llangattock; for a *Polystichum* hybrid, *Effie*; for a variety of *Polypodium cambricum* named *R. Cann Lippincott*, and for *Polystichum hybridum*.

The tent contained many hybrids that have been crossed by skipjacks, as Mr. Lowe discovered that they could be utilised, and showed that, twelve days after being impregnated, the fronds appeared. Specimens with infant fronds, that had retained the prothalloid life for two years, had skipjacks introduced on July 12, 1898, and had formed fronds by July 24. These, with the skipjacks, were exhibited under a bell-glass; here also were three plants produced by dividing a

prothallus, and also some curious plants, the result of cutting away the portions containing the organs of generation, and growing on the divisions for eight years, when fresh organs were formed. Mr. Harris, gardener at the Zoological Society, filled a large tent with trained *Fuchsias* that were large and well grown, and received a certificate.

Passing to animal life, in the sheds were a Jersey cow and calf, exhibited by E. J. Lowe, F.R.S.; the cross being with a black Dexter bull; a Kerry cow and calf, the cross with a white shorthorn bull, exhibited by Mr. Richard Stratton of The Duffryn; a bullock from an Angus Poll, crossed with a shorthorn bull, from Mr. A. Gibbs of Tynesfield; wild Turtle-dove, crossed with ordinary Turtle-dove, with two young ones, exhibited by Miss M. J. Jones, Montague Street, Bristol; duck from a double-yolk egg, exhibited by Mr. E. J. Lowe (two had been hatched, but one was destroyed by a rat); a couple of game-fowls, also from Mr. E. J. Lowe, from a hen that had been isolated for five weeks, in the one the egg was laid an hour after being impregnated, and in the other was one of a series of eight eggs, all being impregnated at once, the eggs having been laid from one to ten days afterwards; all the above received certificates, as did also Dr. Norton, for a collection of birds' eggs; Mr. F. G. Richmond, Braunton Fisheries, for specimens of trout, and trout and salmon hybrids, these were all living specimens, and with them were pickled eggs and hatched trout up to a year old; illustrations of hybrids of *Lepidoptera*, mimicry amongst *Lepidoptera*, Indian leaf butterfly, &c., from Mr. G. C. Griffiths; fossil fish from Bishop Bromley; wasps and bees from Mr. H. A. Francis; in this collection were also their parasitic enemies, &c. From Mr. Dunscombe, optician, were microscopes, meteorological instruments, and various instruments used in butter-making, and by biologists, chemists, &c., and these were also considered worthy of a certificate.

The Plymouth Marine Biological Station had a number of tanks, in which were exhibited specimens of marine life in great quantities; these tanks had sea-water brought of proper specific gravity, and they showed contrivances for generating oxygen, and for a constant change of water. These tanks, and those for trout, were arranged in a large room.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 20.—An ordinary fortnightly meeting of the committees was held on Tuesday last in the Drill Hall, James Street, Westminster. On the last occasion there was a meagre display, and considerable surprise was expressed that the exhibits on Tuesday last were so numerous that Mr. Wright and his staff had difficulty in providing sufficient space to satisfy the exhibitors; in some cases, even, it was found impossible to do this. Orchids, of course, on this occasion, formed but an inconspicuous feature in the exhibition, but Awards of Merit were recommended to *Lælia* × *splendens*, *Cattleya* × *intertexta*, *Miltonia* × *Binotii*, and *M. leucoglossa*.

The Floral Committee granted two First-class Certificates, one to *Pandanus Sanderi*, and another to *Ligustrum Walkeri*. The same committee recommended Awards of Merit to seventeen seedling Dahlias, including varieties of the show, Cactus, Pompon, and single-flowered sections. Our Dahlia growers would therefore appear to have been treated with uncommon liberality. The Floral Committee, in addition, recommended Awards of Merit to two early-flowering *Chrysanthemums*, to a variegated form of the Ontario Poplar, *Adiantum Faulkneri*, *Acer Jühlkei* variegata, *Hibiscus totus albus*, and *Gynierium argenteum aurea lineatum*. There were twelve Medals awarded to exhibitors of plants and cut flowers.

The Fruit and Vegetable Committee recommended one Award of Merit only, and this to a variety of the new perpetual-fruited Strawberries. St. Joseph appears to be the best of those already sent out, and is giving much satisfaction to those who have acquired a stock of the variety. There were plenty of collections of fruit to illustrate the lecture given by Mr. Roupell upon "Fruit Cultivation in Suburban Gardens," and several Medals were awarded by the committee to these and other collections of fruit and vegetables. Some extraordinary Onions were shown.

Floral Committee.

Present: W. Marshall, Esq., chairman; and Messrs. Jno. Fraser, H. B. May, W. Howe, Geo. Stevens, Thos. Peed Chas. Jeffries, Jas. Walker, T. W. Sanders, J. D. Pawle, H. J. Jones, Geo. Paul, D. B. Crane, and Ed. Mawley.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, had a group which included fifty species and varieties of the genus *Davallia*. The method now practised by Mr. May of exhibiting a group of varieties of one genus of Ferns only, offers to visitors an excellent opportunity to compare one with another, and to acquaint themselves with the variation of form to be obtained in them. From the tiny *D. alpina* to *D. ornata*, *D. polyantha*, and *D. fijiensis*, there is endless variation in degree of the division of the fronds and pinnae (Silver-gilt Banksian Medal).

A First-class Certificate was recommended to *Pandanus Sanderi*, several plants of which were shown by Messrs. F. SANDER & Co., St. Albans. This is unlike *P. Veitchi*, in that the variegation is yellow instead of white, but in other respects it resembles very considerably that well-known and popular stove decorative plant. It was exhibited at the last Ghent Quinquennial and figured in our columns at the time.

An Award of Merit was recommended to *Adiantum Faulkneri*, from Mr. THOS. ROCHFORD, Turnford Hall Nurseries, Turnford. It is a form in which the pinnae is tapered off very considerably to the petiole, being leg-of-mutton-shaped. The plant has considerable decorative value. Mr. Rochford also showed plants of a crested *Pteris* named *P. Rochfordi*.

An Award of Merit was recommended to a large early-flowering *Chrysanthemum*, from Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham. It is a white Japanese form, with yellow centre, and was certificated by the National Chrysanthemum Society at the September show. *Populus canadensis variegata*, from Mr. J. CARTER, Willow Bank, Keighley, was recommended an Award of Merit.

MESSRS. PAUL & SON, The Old Nurseries, Cheshunt, had several very fine things. They obtained a First-class Certificate for *Ligustrum Walkeri*, showing several plants in pots. The leaves are ovate-acuminate, and have wavy margins. The young stems are reddish, and the appearance of the plant very distinct. An Award of Merit also for *Acer Jühlkei* variegatum, a very ornamental green and white-foliaged Sycamore, and a similar award for *Hibiscus* (*Althæa*) *totus albus*, a pure white-flowering hardy *Hibiscus*. Messrs. Paul & Son staged, in addition to the plants mentioned, a collection of Rose blooms in considerable variety, and a fine lot of hardy herbaceous perennial flowers, and autumn-flowering *Crocuses*. Blooms of *Erythrina crista-galli* were noticed. They had been produced by a plant forty years old, and growing out-of-doors (Silver-gilt Flora Medal).

Mr. Jas. Hudson, gr. to Messrs. DE ROTHSCHILD, Gunnersbury House, Acton, Middlesex, showed about a dozen plants of Messrs. Sander's new *Acalypha Sanderi*. These were in 7-inch pots, and bore from thirty to forty racemes of flowers each. In some cases three racemes were hanging from one node. This plant has never been shown better (Silver Banksian Medal).

MESSRS. W. PAUL & SON, Waltham Cross Nurseries, Herts, made an exhibit of cut Roses, illustrating so many as 100 varieties. These included a fine lot of Teas and Noisettes, Hybrid Teas, and China Roses, and the exhibit was deservedly awarded a Silver-gilt Banksian Medal.

A large exhibit of the early-flowering varieties of *Chrysanthemums* was made by Mr. W. WELLS, Earlswood Nurseries, Surrey. Mr. Wells was recommended an Award of Merit for Louis Lemaire, a light bronze sport from Grunerwald, and previously certificated by the National Chrysanthemum Society. Other varieties conspicuous in the exhibit were Madame Marie Masse, Queen of the Earlies, Mychett White, Ivy Stark (yellow); Flora, a pretty little button-like flower, yellow; and Madame Zepher Livett (Silver Banksian Medal).

A collection of cut spikes of *Cannas*, representing some of the newer varieties, and shown by the Dowager Lady FREAKE, Fulwell Park, Twickenham (gr., Mr. A. H. Rickwood), was recommended a Bronze Banksian Medal.

Mr. J. Hudson, gr. to Messrs. DE ROTHSCHILD, Gunnersbury House, Acton, again showed a fine group of *Salvia splendens* var. *grandiflora*, beautifully flowered and grown. The group was set off by a ground-work of variegated-leaved plants.

A grand exhibit of individually superb spikes of *Gladiolus gandavensis*, G. Nanceianus, and G. Lemoinei, was staged by Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge. There were fourteen stands of twelve spikes each. The colours were greatly varied, and they must have consisted of almost every conceivable tint, with and without feathering. The G. Nanceianus varieties were, on the contrary, as regarded colour or length of flower-spike, nowhere by comparison, but their compact short spikes and smaller flowers of greater substance, give us the idea of their being better bad-weather flowers than the gayer *Gandavensis* varieties. No variety came in for a special award.

MESSRS. BURRELL showed a few miniature Cactus and Pompon varieties of the Dahlia. A Silver-gilt Medal was awarded.

MESSRS. F. G. FOSTER, Brockhampton Nurseries, Havant, showed a number of cut-flowers of Sweet Peas set off by small Ferns.

Mr. J. H. WIRRY, Superintendent Nunhead Cemetery, put up a semicircular group of *Chrysanthemums* and Maiden-hair Ferns, illustrative, as we thought, of nothing in particular (Silver Banksian Medal).

MESSRS. J. VEITCH & SONS, LTD., King's Road, Chelsea, exhibited some beautiful additions to the forms of *Hibiscus syriacus*, two having double flowers, viz., elegantissima, the ground colour of which is bluish-white, with a deep purple patch at the base of each outer petal—the flower buds are white, banded with a shade of red; and Comte de Hainault, white, with a small purple patch at the base of all the petals. The single-flowered variety was *Ce la Veuve*, a flower with a magenta ground colour, and having a red-purple patch at the bottom of the flower. A plant of each of the following was shown, viz., *Abelia rupestris*, which had been covered with blossoms, now going over; *Bignonia grandiflora*, probably this exhibit consisted of detached flowering shoots stuck into damp soil, in order to show the floriferous character of the species; *Caryopteris mastacanthus*, a charming blue-flowered plant, of erect habit; and three varieties of the Pampas-grass, viz., *Gynierium argenteum Rendatleri*, a plant 9 feet in height; *G. a. aureo-lineatum*, with leaves narrow, and having narrow yellow

margins—a graceful and pleasing variety (Award of Merit); and *G. a. albo-lineatum*, of erect habit as seen, and with white and green leaves.

DAHLIAS.

Mr. THOS. S. WARE, Hale Farm Nurseries, Tottenham, made a grand display with Dahlia blooms of the Cactus and Pompon sections only (Silver Banksian Medal).

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, had an exhibit of Dahlia flowers of the Pompon, single-flowered and Cactus sections (Silver Flora Medal).

Mr. S. MORTIMER, Rowledge Nurseries, Farnham Royal, staged a grand lot of Cactus and Show Dahlias (Silver Flora Medal).

Mr. C. TURNER, of the Royal Nurseries, Slough, displayed varieties of the Cactus section particularly, and a few Pompons. Messrs. PAUL & SONS, Cheshunt, had also some Dahlias in their collection of Roses and hardy flowers.

It was not surprising there were many new Dahlias, seeing that the soil is still warm and productive. Of new show Dahlias there were but few, but an Award of Merit was made to Dahlia David Johnson, a charming self-coloured variety, in colour salmon, the reverse of the petals delicate purple, each petal tipped with buff, from Mr. GEO. HUMPHRIES, Langley, Chippenham, who had the same award for Cactus Ranji, so far one of our darkest as well as our most refined Cactus varieties, really an improved Masterpiece. Mr. HUMPHRIES had a pretty and promising light Cactus variety, which will no doubt be seen earlier another year, and a promising fancy, named Manxman, came from the same exhibitor. The ground of this flower is bright lilac, flaked and striped with mauve-crimson.

An Award of Merit was made to show Dahlia William Neate, yellow, heavily flushed with reddish-salmon, of the build of Flora Wyatt, and apparently a seedling from it; also to fancy Watchman, which, owing to the lateness of the season, was scarcely so refined as at the Crystal Palace; the ground colour is old-gold, flaked, striped, and splashed with deep crimson—these came from Messrs. KEYNES, WILLIAMS & Co., of Salisbury. There is much need of additions to the fancy Dahlias, as so many of the best of them are showing a tendency to revert to self forms. The Salisbury firm also had some fine Cactus varieties, and Awards of Merit were made to the following:—Clown, with its fluted orange salmon petals amply tipped with white—a striking and distinct variety; Progenitor, crimson, the points of the tubular petals deeply cut and much fringed, the flowers large and full; Countess of Lonsdale, salmon suffused with reddish-mauve, a beautiful variety of the best Cactus type; and Viscountess Sherbrooke, rich golden ground flushed with red, and also with salmon; also to Pompon The Duke, deep crimson, a medium sized flower of exquisite shape, and by comparison quite distinct in colour.

Awards of Merit were made to Cactus Antelope, which might be described as a crimson Fantasy, having the shape of that distinct variety, but of richer colour; and to Lucius, brilliant orange-salmon, suffused with red, both very fine and quite distinct, from Messrs. J. BURRELL & Co.; also to Pompons Claribel, pale ground tipped with purple; a medium sized symmetrical variety quite distinct in character; and to Iris, old gold, edged with the palest Apricot and delicate pinkish-mauve, a very pretty and distinct variety from Mr. CHARLES TURNER, Royal Nursery, Slough; also to Pompon Demon, shaded crimson, small, perfect in shape; Distinction, cerise-crimson flushed with magenta; and Snowflake white. Of each of these three varieties, ten blooms were shown of singular uniformity and quality; also to single-flowered variety, Leslie Seale, which has a dark-crimson zone round the eye, and a broad margin of silvery-lilac—very pleasing. These came from Mr. F. W. SEALE, Vine Nursery, Sevenoaks.

Other new varieties of Cactus Dahlias consisted of J. F. Hudson, a very distinct variety of the Fantasy type, the prevailing colour carmine-rose, flushed with crimson, on a yellow ground; the centres of the flowers were somewhat imperfect; Lady Edmund Talbot, salmon, suffused with pale cerise, distinct in colour; Miss Gertude Pearson, of the Starfish type, but deeper in colour, not so much orange, but more scarlet, a good Cactus variety; and Lady Pearson, pale cerise-crimson, flushed with magenta; also single-flowered varieties, Sunray and Goldfinch, not shown in the best condition.

The fact that seven Awards of Merit were made to new Cactus Dahlias after a very careful comparison with the best varieties in cultivation may be taken as bearing emphatic testimony to the rapid advance still being made in the improvement of this type.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), J. Gurney Fowler, H. Ballantine, H. J. Chapman, J. Gabriel, W. H. Young, H. Little, W. Cobb, W. H. White, J. Douglas, E. Hill, S. Courtauld, H. M. Pollett, and T. W. Bond.

There was a great increase in the number of exhibits compared with the last two or three meetings, and some very interesting things were staged.

The president of the Society, Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr., Mr. W. H. White), contributed a remarkable group of Miltonias, of which three were natural hybrids, viz., *Miltonia* × *Binotii*, supposed to be between *M. candida* and *M. Regnelli* purpurea, which bore seven spikes of flowers, having the sepals and petals similar in form, and of a cream-white colour, tinged with lilac at the base, and quaintly barred with cinnamon-brown; the lip, which

ad the broadly-ovate form of that of *M. Regnelli*, but cleft and crimped on each side in the middle, was rosy-lilac (Award of Merit). A still prettier novelty was *M. × leuco-glossa*, which may be a hybrid of *M. cuneata*; the sepals and petals were cream-white, with blotches of light violet colour; the lip pure white, except for some slight purple marking around the crest (Award of Merit). The third hybrid was the best form of *M. × Bluntii* Lubbersiana, with handsome flowers of bluish-white, and different shades of rose, and which has been previously exhibited. The species were *Miltonia spectabilis*, of which a fine specimen was shown covered with flowers, and which had been at Burford for some years (Cultural Commendation); *M. s. Morelana*, and *M. Clowesii*, and with them were a finely flowered plant of *Oncidium longipes*, and *O. trulliferum*.

Messrs. J. VEITCH & SONS, Royal Exotic Nursery, Chelsea, staged an effective and interesting group, which secured a Silver Flora Medal. Among the fine things in the group were *Lælia* × *splendens* (purpurata ♀, crispa ♂), the reverse cross of that exhibited by Mr. BOND at the last meeting, but very much resembling it. The hybrid is of interest, as it proves that the old *L. × Exoniensis* was not of this parentage as had been supposed by some, though there is some resemblance in the outline of the flowers of both. The sepals and petals were white, tinged with lilac; the elongated crimped lip being rich reddish-purple, edged with lavender, and bearing a sulphur-yellow patch inside the whitish side-lobes (Award of Merit). Another large and handsome hybrid, which secured an Award of Merit, was *Cattleya* × *intertexta* (*C. labiata* Warneri × *C. Mossiae*), with bright rose flowers, having the front of the lip of a dark purplish-crimson tint; the group likewise comprising *Dendrobium Mirbelianum*, with singular yellowish-green and brown flowers; a fine plant of *Epidendrum Brassavola*, with three spikes, each of eighteen to twenty flowers, with conspicuous white lip, tipped with rose; several of the showy *Lælio-Cattleya* × *Nysa* and its varieties purpurea and splendens; *L. C. × Eunomia*, *Lælia* × *juvenilis*, the rare orange-coloured *Lælia monophylla*, with thirteen flowers; the elegant *Cologyne Veitchii*, with long drooping spikes of white blooms; *Cattleya* × *Patrocini*, *C. × Wendlandi*, *C. × porphyroplebia*, *Lycaste leucantha*, *Oncidium Marshallianum*, *Cypripedium* × *T. B. Haywood*, and other *Cypripediums*, &c.

C. H. FEILING, Esq., Southgate House, Southgate, N. (gr., Mr. F. Canham), staged a very pretty group, made up of some three dozen excellently-grown and profusely-flowered *Dendrobium Phalaenopsis Schoderianum*, the different plants varying from the light-coloured and white varieties tinged with rose, to the dark-tinted forms, the light ones predominating; and arranged with them were several good *Cattleya labiata* Gaskelliana, *C. Gaskelliana* Feilingi being a pretty white flower, with a pale rose-pink flush on the lip. Also in the group were *Cypripedium* × *Bryan* and other showy kinds, the group securing a Silver Banksian Medal.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, were awarded a Silver Banksian Medal for an effective group, in which were several good varieties of *Vanda cœrulea*, and good examples of *Lælio-Cattleya* × *intermedia-flava*, *L. C. × Pallas*, *L. C. × Nysa*, *Lælia* × *elegans*, *Cattleya* × *porphyroplebia*, *C. velutina*, *Cypripedium* × *picturatum*, *C. × Palawanense*, *C. × Harrisianum superbum*, *C. × marmorophyllum*, and the large and prettily marked *C. × T. W. Bond*.

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. King), showed *Cattleya* × *Hardyana* "Mrs. J. Colman," a form with peculiar features, in the purplish-crimson labellum having but very fine orange lines at the base, the lip at a short distance appearing to be almost wholly of a purplish-crimson colour.

Messrs. J. W. MOORE & Co., Ltd., Cragg Royd Nurseries, Rawdon, near Leeds, sent a fine plant of *Vanda cœrulea*, bearing a very stout inflorescence.

C. L. N. INGRAM, Esq., Elstead, Godalming (gr., Mr. T. W. Bond), sent *Lælio-Cattleya* × *T. W. Bond* (*C. labiata* ♀, *L. purpurata* ♂), a large flower, differing somewhat from *L. c. × ximlia* and other crosses of the same parentage previously shown. Frau IDA BRANT, Riesbach, Zurich, sent a good inflorescence of *Angraecum Ellisii*, and spikes of a form of *Odontoglossum Lindleyanum*, with purple front lobe to the lip.

Messrs. F. SANDER & Co., St. Albans, showed two examples of the fine *Dendrobium atroviolaceum*, which they have succeeded in importing in quantity, some plants of *Odontoglossum grande*, and *Cypripedium purpuratum*.

Fruit Committee.

Present: Philip Crowley, Esq. (chairman), and Messrs. Jos. Cheal, A. H. Pearson, J. Wright, Alex. Dean, J. W. Bates, Geo. Wythes, H. Balderson, J. Smith, W. J. Empson, Robt. Fife, and Geo. Reynolds.

An Award of Merit was recommended to the perpetual-fruited Strawberry St. Joseph, fruits or plants of which were shown by Mr. JAS. HUDSON, Messrs. H. CANNELL & SONS, Swanley, and Messrs. GEO. BUNYARD & Co., Maldstone. Mr. HUDSON's exhibit of plants fruiting in pots represented the variety very finely, and it is the best of these continental varieties yet in commerce.

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., contributed a collection of Apples and Pears in about 100 dishes. Among the Pears, varieties showing signs of ripeness were Louise Bonne of Jersey, Clapp's Favourite, Souvenir du Congrès, Duchesse d'Angoulême, and Williams' Bon Chrétien. There were upwards of seventy dishes of Apples, including kitchen and dessert varieties (Silver-gilt Knightian Medal).

Another large exhibit of fruit was made by Messrs. J. PEED & SONS, Roupell Park Nurseries, Norwood Road, London. In this exhibit were excellent Grapes of the varieties Trebbiano, Barbarossa, Syrian, Gros Colmar, Golden Queen, Alicante, Muscat of Alexandria, Mrs. Pince, Madresfield Court, Alnwick Seedling, and Black Hamburg. Of Pears we noticed commendable specimens of Louise Bonne of Jersey, Hazel, Flemish Beauty, Clapp's Favourite, Williams' Bon Chrétien, &c. Of Apples there were numerous varieties, there being of Apples and Pears together about ninety dishes (Silver-gilt Knightian Medal).

Messrs. W. PAUL & SONS, Waltham Cross, Herts, contributed a group of orchard-house fruit-trees in pots, most of them were Apples, but there were a few specimens of Pears, and a Lady Palmerston Peach was included, and several dwarf Fig-trees in fruit. In front of the trees were fifty-two dishes of Apples. The fruits and trees were exceedingly meritorious (Silver Gilt Knightian Medal).

Mr. J. MILLER, gr. to Lord FOLEY, Ruxley Lodge, Claygate, Surrey, again showed a collection of choice hardy fruits. There were ten dishes of Apples, eight of Pears, four of Peaches, three of Plums, one of brown Turkey Figs, and one of Pitmaston Orange Nectarine (a Silver Banksian Medal was awarded this exhibit).

There was a fine collection of Apples from Jersey, which showed how very finely certain varieties do in Jersey. The exhibit was made by F. S. ROBERTS, Esq., Beauvoir, St. Saviour's, Jersey (gr., Mr. R. J. Hamill). The Apples best shown were Emperor Alexander and Mère de Ménage, both of these, the former particularly, being excellent in size and quality. Ribstons, Cox's Orange Pippin, Golden Noble, Worcester Pearmain, and others were commendable. There were twenty-six dishes of fruit (Silver Banksian Medal).

The best exhibit of fruit illustrative of Mr. Roupell's lecture was one from Mr. G. Kelf, gr. to Mrs. ABBOTT, South Villa, Regent's Park. This garden is within two miles of Charing Cross, but the fruit exhibited would have been creditable to a garden enjoying the advantages of a rural site. Alicante and Muscat of Alexandria Grapes were moderate in size, but extremely good in finish; six bunches were shown of each variety. There were four fine Melons, of the varieties Monarch, Blenheim Orange, Holborn Favourite, and another; Coe's Golden Drop Plums from pot-trees; and excellent samples of Tomatos, Peach Blow, Perfection, Golden Jubilee, Sutton's Dessert, and Duke of York. A bunch of fruits of *Musa Cavendishi* completed the exhibit (Silver Knightian Medal).

From W. ROUPPELL, Esq., Harvey Lodge, Roupell Park, S.W., were shown Fig and Persimmon trees in pots showing how Mr. ROUPPELL succeeds in cultivating fruits within the five miles' radius. A collection of fruits from the same garden was most praiseworthy. This included the following varieties of Grapes; Muscat of Alexandria, Gros Colmar, Diamant Traube (a white Grape), and Centennial. Of Tomatos, good samples of seven varieties were shown, and a number of dishes of Apples, including Lord Suffield, Ecklinville Seedling, Frogmore Favourite, Cellini Pippin, Warner's King, Emperor Alexander, and capital specimens of Bietigheimer, a German variety (Silver Knightian Medal).

Mr. WRIGHT showed from the Society's gardens at Chiswick a collection of 100 varieties of Apples, which were intended to illustrate the subject of the lecture. In these gardens the superintendent has to contend with every disadvantage a suburban garden is placed under, and remembering this, the exhibit of Apples was very satisfactory.

A collection of seven dishes of Apples, and of five dishes of Pears, was shown by Mr. W. COLLINS, The Gardens, Chios House, Clapham Park, London. A new Melon, named Foot's Sherbornian, from Messrs. E. FOOT & SON, Half Moon Street, Sherborne, was a white-fleshed variety, but it obtained no award.

Mr. JAS. DAY, gr. to the Earl of GALLOWAY, Galloway House, Gariestown, N.B., showed fruits of the pretty little Apple summer Thorle Pippin. It is described as an early dessert Apple, cultivated largely in Scotland (Vote of Thanks). From Mr. ARTHUR BULL, Cottenham, Cambs, came some extra-sized specimens of Pond's Seedling Plums.

Another exhibit of fruits was shown by Mr. H. Guyett, gr. to Mrs. GABRIEL, Leigham Court Road, Streatham. Of Pears and Apples there were twenty-nine dishes, also two dishes of Crabs, and three bunches each of Gros Maroc, Black Hamburg, and Black Alicante Grapes (Silver Banksian Medal).

From Messrs. de ROTHSCHILDS' garden at Gunnersbury House (gr., Mr. Jas. Hudson), were shown six fine fruits of the same number of varieties of Melons. These were Eureka, Scarlet, Triumph, Hero of Lockinge, Frogmore Orange, and Sutton's No. 69, a nice-looking green-fleshed fruit. Mr. Hudson had also very choice fruits of twelve varieties of Plums, gathered from his pot-trees grown in a cold orchard-house. These were Grand Duke, Coe's Golden Drop, Late Rivers', Prince Claude de Bay, Monarch, Imperial de Milan, Ickworth Imperatrice, Gutrie's Late Gage, Rivers' Orange (new) Transparent, Golden Transparent, and Late Transparent (Silver Banksian Medal).

A nice collection of fruits and vegetables was shown by W. LAWRENCE, Esq., Elsfeld House, Hollingbourne (gr., Mr. T. Robinson), which was recommended the Award of a Silver Banksian Medal. Besides specimens of most kinds of vegetables, there were Black Alicante, Buckland Sweetwater, and Gros Maroc Grapes; seven nice Melon fruits; Princess of Wales, Lord Palmerston, and Sea Eagle Peaches; Pears, Dr. Jules Guyot and Madame Treve; and Peas-good's Nonsuch Apples.

A remarkable exhibit of Mammoth Onions was made by Mr. W. J. EMPSON, gr. to Mrs. WINGFIELD, Amptill House,

Amphill. He had fourteen varieties, and the heaviest bulbs were of the variety Record, eighteen of which were said to weigh 44½ lb., and the heaviest of these was 2 lb. 11 oz.; Bedfordshire Champion, Ailsa Craig, Lord Keeper, Holborn, Cocoa-nut (in shape like a Cocoa-nut), Cranston's Excelsior, Golden Globe Tripoli, Magnum Bonum, Brown Globe, a nice-looking, brown-skinned variety of the Globe section; and Rousham Park Hero were all of exceptional size. A type of the Globe Onion labelled Empson's Selected Champion Globe was a heavy, clean-looking Onion of the best possible shape. The exhibit was a further testimony to the skill of Mr. Empson in producing first-class exhibition vegetables. The Onions shown together weighed something like half a ton (Silver Knightian Medal).

Lecture.

FRUIT-CULTIVATION IN SUBURBAN GARDENS.

Mr. W. Roupell, who delivered a lecture upon this subject, referred in his opening remarks to the main drainage scheme of London. Necessary as this is from sanitary and other reasons, said Mr. Roupell, it has intercepted springs and rivulets, and had robbed the suburban gardens of the moisture that previously rested in the subsoil. In periods of drought the trees suffer greatly—more than formerly. More than this the present system of drainage was severely condemned from the point of view of waste. The great quantity of organic matter carried down to the sea, is not only poisonous to the fishes, but it represents just so much loss of manure to the land—manure that properly belongs to it.

The condition of standard fruit and other trees in suburban gardens is therefore less satisfactory than it should be. Suburban gardening is more difficult than it was thirty years ago. When the old gardens were made they were composed of the original soil of the district, but, latterly the light soil from such sites had been appropriated by the builder, and new suburban gardens were generally composed of clay and a variety of rubbish. In most of the old gardens the surface-soil is exhausted, and generally permeated with fungoid growths and insects. Such gardens, said Mr. Roupell, should be trenched. After rebuking young gardeners for exhibiting a preference for potting-shed work, and for showing a contempt for the spade, Mr. Roupell said that when trenching such ground, it was as advisable to bring a little clay to the top, providing that it be done in a moderate degree. If dressed with lime and left exposed upon the surface for a time, it would be reduced to a condition in which it can be worked. Burnt clay, wood-ashes, &c., may be useful to mix with such soil. The clearings from fowl-houses, dovecote, all the soot obtainable, and other manurial agents, should be preserved and put at the bottom of the trenches. When the soil has been so treated, it should be given a heavy dressing with quick-lime, and in spring some half-inch bones or bone meal may be forked-in. A green crop, such as Tares, should then be sown, and the following season the land will be in good condition for fruit-tree planting. Stable-litter is of use as a mulch, but is not of great manurial value.

In the matter of planting trees, Mr. Roupell had never been able to obtain such perfect pyramid trees from maiden plants as he had grown from trees bought from the nursery when two years old.

In regard to pruning, Mr. Roupell is of opinion that when the foundation of a tree has been laid, the subsequent pruning should consist rather in thinning the growths than in shortening them. Summer pinching, too, has its uses, but a tree reduced to a stunted growth by severe pinchings will never recover itself.

Cordons were next alluded to, and the amateur standard, a form of tree which is permitted to fruit as an upright cordon until a head is formed, and it becomes a standard. Mr. Roupell declared that all his standards are formed in this manner. Next the lecturer rightly insisted that fruit trees should be cultivated and manured as a crop. Tall-growing vegetables ought not to be planted between them. If any of the trees are too vigorous, have them lifted and replant them. Should the specimens be too large, the roots may be pruned, operating upon those on one side of the tree each season.

Mr. Roupell then proceeded to speak of the alleged dying-out or decadence of certain varieties of Apples. Ribston Pippin, said he, could be obtained in thousands of instances upon the Paradise stock, quite free from canker, and in perfect health. Mr. Roupell went on to speak of certain varieties of Apples mentioned by Shakespeare, and that are still existent; also of others described by Parkinson.

Speaking of frost, the lecturer said that generally the crop of fruit for the season depended upon the character of the weather during the period the trees are in bloom. In his own garden this year there was no frost when the Apple-trees bloomed, and he has a crop of fruit; but when the Pear-trees bloomed there was severe frost, and the result is, that only on the most sheltered portions of the trees are there any fruits. Mr. Roupell spoke of Apples, Pears, Melons, Grapes, Peaches, Cherries, Currants, Gooseberries, Figs, Strawberries, Mulberries, and Blackberries, and the suitability of each kind of fruit for cultivation in London suburban gardens. In reference to the uncertainty attached to a crop of Melons, and comparing an indifferent Melon to a good Tomato, to the latter fruits advantage, Mr. Roupell related an amusing anecdote. He said, that in Covent Garden recently there was a consignment of very indifferent Water Melons, and it was difficult to find a purchaser for them, but eventually some person obtained them at a very cheap rate indeed. He in turn, however, had a great difficulty in disposing of them, but at last, despairing of selling them as Melons, he easily and

quickly sold them as Vegetable-Marrows. There was no subsequent complaint from the buyers. Mr. Roupell thought that many indifferent fruits of the Melon might be improved by boiling. The Fig, Mulberry, Blackberry, and Peach-tree were especially recommended to the London suburban fruit-grower as being certain to yield good results. Cherries, unless netted, could not be ripened successfully on open walls; the birds would not allow them to yield a crop. Plums, excepting the Victoria, did not succeed easily near London, but if the trees were unfruitful, much benefit might be done them by lifting the roots, adding a little lime, and replanting them very firmly. The choicest fruits, however, could only be obtained from orchard-house cultivation. Of the Blackberries, *Rubus laciniatus* was by far the best.

Mr. J. Cheal, who presided, said he was of opinion that the main drainage of London had none but good effects. It was impossible to drain such stiff subsoil too effectively. He, however, hoped that a means would be found of using the organic matter now wasted.

SHIRLEY AND SURROUNDING DISTRICTS GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT ASSOCIATION.

SEPTEMBER 9.—The usual monthly meeting of the above Society was held at the Parish Room, Shirley, Southampton, on the above date, Mr. B. LADHAMS presiding over a fair attendance of members. The lecture was given by Mr. GEORGE GARNER, gr., Cadland Park, Hythe, Southampton.

It was a sound practical lecture on all the up-to-date methods of growing high-class vegetables. Necessarily the instructions given were brief, but at the same time no point of culture was missed. Mr. Garner is a believer in much mulching of crops, and in such a season as the present he is fully justified. At the close of the lecture there was a lively discussion, chiefly as to the value or otherwise of sea-weed as a manure. A hearty vote of thanks to the lecturer closed a very interesting meeting. There was a bright little display of flowers and vegetables—the latter for prizes. C. G. STUART MENTETH, Esq., J.P. (gr., Mr. W. Risbridger), was 1st, for six sorts; and W. T. G. SPRANGER, Esq., the President (gr., Mr. H. Curtiss) was 2nd. In the class for four sorts of vegetables, open only to cottagers, Mr. J. R. COLE was 1st, and Mr. C. CURTIS 2nd. Cannas, Dahlias, and Cockscombs were shown by Mr. E. G. WILCOX; seedling Pelargoniums, Dahlias, &c., by Mr. F. COZENS; and herbaceous plants, by Mr. B. LADHAMS.

ROYAL CALEDONIAN SHOW.

SEPTEMBER 14, 15.—The following special awards were made too late to chronicle in our issue for September 17:—

A Gold Medal to HER MAJESTY THE QUEEN (gr., Mr. Owen Thomas); and a like award to Messrs. J. VITCH & SONS, Ltd., Chelsea, for a group of plants. Silver Medals also were awarded to the undermentioned, viz., Mr. JONES, Lewisham; Messrs. WALLACE & CO., Colchester, for Liliums; Messrs. D. & W. BUCHANAN, Kippen, for a charmingly arranged table of Grapes, Tomatoes, and vases furnished with foliage; also to Messrs. W. THOMSON & SON, for table of plants, Grapes, and Tomatoes. First-class Certificates also were awarded to Mr. W. ANGUS, Norwood Hall Gardens, Aberdeen, for a double-flowered Sweet Pea; to Mr. CAMPBELL, Auchencraigh, Blantyre, for yellow Carnation Miss Alley; and to Messrs. D. & W. BUCHANAN, Kippen, for a new variety of black Grape.

The group of plants and flowers, among which were several masses of flowering Lily of the Valley, from Mr. JOHN DOWNIE, nurseryman, Princes Street, Edinburgh, was omitted from last week's sketch of the show.

HORTICULTURAL SHOW AT CHELTENHAM.

SEPTEMBER 21.—The autumn show of the County of Gloucester and Cheltenham Royal Horticultural Society was opened on Wednesday afternoon at the Winter Gardens, Cheltenham, in veritable summer weather. A tent had been erected on the lawn near the Promenade for the ornamental groups and flowers, and the rink of the building was devoted to fruit, vegetables, table decorations, and exhibits not for competition. One of the chief features of the exhibition was the display made by the four competitors for the substantial prizes offered for ornamental groups of flowering and foliage plants, arranged for effect, to cover 30 square feet. The class was open to all England, but the two leading prizes remained at home, the first having been secured by Mr. J. CYPHER, of the Queen's Nurseries; and the 2nd by Mr. T. P. W. BUTT (gr., Mr. G. W. Marsh); the 3rd was given to W. FINCH, of Coventry; and an extra prize was awarded to Mr. W. VAUSE, of Leamington.

Dahlias made a brilliant show, and competition was keen. For twenty-four distinct blooms, Messrs. HEATH & SON, Cheltenham, were placed 1st; Messrs. KEYNES, WILLIAMS & CO., Salisbury, 2nd; and Mr. W. TRISSEDER, Cardiff, 3rd.

Gloucestershire amateurs were well to the front in a class for twelve distinct blooms, the successful exhibitors being Mr. T. HOBBS, Bristol; Mr. HARRIS, Bristol; Mr. WHITING, Cheltenham.

Col. ROGERS (Mr. Lusty, gr.) beat the Rev. J. P. DAVIES (Mr. Mansfield, gr.) in collections of zonal Pelargoniums, though better had been exhibited.

MARKETS.

COVENT GARDEN, SEPTEMBER 22.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	4 0-12 0	Foliage plants, per	
Aspidistras, p. doz.	12 0-30 0	dozen ...	12 0-36 0
— specimen, each	5 0-15 0	Liliums, various,	
Dracenas, each	1 0-7 6	per dozen ...	12 0-30 0
— various, p. doz.	12 0-24 0	Marguerites, p. doz.	6 0-12 0
Evergreen shrubs,		Mignonettes, p. doz.	4 0-6 0
in variety, p. doz.	6 0-24 0	Palms, various, ea.	2 0-10 0
Ferns, small, per		— specimens, ea.	10 6-84 0
dozen ...	1 0-2 0	Pelargoniums, doz.	9 0-12 0
— various, p. doz.	5 0-12 0	Scarlets, per doz.	3 0-6 0
Ficus elastica, each	1 0-7 6		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Keswick,		Nectarines, doz.	6 0-12 0
bush ...	3 0-4 6	— second quality	2 0-4 0
— Suffolk, bush.	4 0-5 0	Oranges, Austra-	
— Duchess Fa-		lian, cases ...	9 0-12 0
vourite, sieve...	4 0-4 6	— Canary, cases...	7 6 —
— Worcester Pear-		— Californian,	
main, per sieve	4 6 —	cases ...	16 0 —
— Manx Codling,		— Italian, cases...	15 0-16 0
per bushel ...	4 6 —	Peaches, per doz.	
— Ingestres, sieve	3 6-4 0	(according to	
— King's, p. sieve	3 0 —	size) ...	6 0-12 0
— Warner's King		— Second quality	2 0-4 0
and large sorts		Pears, Eng., Hazels,	
of the various		sieve ...	3 0-4 0
cookers, per		— Williams, do.	3 0-4 0
bushel ...	5 0-6 0	— foreign, Wil-	
Bananas, bunch	7 0-10 0	liams, per doz.	1 6-3 0
Blackberries, pecks	2 3-2 6	— Beurre Hardy,	
— sieves ...	4 0 —	cases ...	11 0-14 0
Cobnuts, per 100		— Bon Louise (108)	16 0 —
lb. ...	45 0-50 0	— Duchess (135)...	12 0 —
Damsons, sieve	3 0-4 0	Pines, St. Michael	3 0-7 0
Figs, per dozen	1 0-1 6	Plums, Bush, per	
Filberts, per 100 lb.	30 0-40 0	sieve ...	1 9-2 0
Grapes, English,		— Diamonds ...	4 0-5 0
Alicante ...	0 9-1 3	— Goliaths ...	3 0-4 0
— Gros Colman ...	1 0-1 6	— Pond's Seedling	4 0-6 0
— Hamburg, lb.	1 6 —	— Victorias ...	3 6 —
— second quality	0 9-0 10	— Magnum Bo-	
— Channel Isles,		nums, sieve ...	5 0-6 0
per lb. ...	0 6-0 9	— Prunes, sieve	3 0-4 0
— Muscats, per lb.	1 6-3 0	— Switzens, sieve	2 3 —
— 2nd quality...	1 0-1 3	Walnuts, Dutch	
Melons, each	1 0-1 6	Prickles ...	4 0 —

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Lettuce, French	
per doz. ...	1 6-2 6	Cab., doz. ...	2 4-2 8
Beans, Eng., Dwarf,		— Cos, doz. ...	4 0 —
per sieve ...	2 0-3 6	Marrows, Vege-	
— Runners, in bus.	4 0-5 0	table, per dozen	2 0-3 0
Beetroots, new, per		— per pot ...	6 0-7 0
dozen bunches	3 0-4 0	Mint, per dozen	
— p. tally of 60 ...	2 6-4 0	bunches ...	2 0 —
Brussels Sprouts,		Mushrooms, house,	
per sieve ...	3 0 —	per lb. ...	1 3-1 6
Cabbage, doz. ...	1 0-2 9	Onions, Dutch,	
— open, p. tally...	4 0-8 0	bag ...	3 0-3 6
— tally ...	4 0-10 0	— green, per doz.	
Cauliflowers, Eng-		bunches ...	1 6 —
lish, per dozen	1 6-2 0	— Valencia and	
— per tally ...	8 0-10 0	Oporto, cases...	5 0-5 6
Cress, doz. punnets	1 6 —	— Picklers, in bags	2 0-2 6
Carrots, bunches,		— in sieve ...	1 6-2 0
per dozen ...	1 3-1 6	Parsley, per dozen	1 0-2 0
— washed, in bags	3 6 —	— sieve ...	1 0 —
— Surrey, bunchs.	3 6-4 0	Potatoes, Bedfords	
Celery, new, bundle	1 0-1 6	and Lincolns	6 0-9 0 0
— White Roll ...	1 0-1 6	Radishes, Round,	
— Red ...	0 10-1 0	breakfast, per	
Cucumbers, p. doz.	1 6-3 0	dozen bunches	
Endive, English, p.		(home grown) ...	1 3-1 6
score ...	1 6 —	Salad, small, pun-	
— French, per		nets, per dozen	1 3 —
dozen ...	1 6 —	Shallots, good, cwt.	10 0 —
— English, Bata-		Spinach, per sieve	2 0-2 6
vian, score ...	1 6-2 0	Tomatoes, English,	
Garlic, Eng., per lb.	0 2 —	per lb. ...	0 2-0 3½
Horse-radish, New		— Belgian, cases,	
English, bundle	2 0-2 6	good ...	1 3-1 6
— foreign ...	1 6 —	— Channel Isles,	
— English, loose,		per lb. ...	0 2½-0 2
doz. ...	2 0 —	Turnips, Eng., per	
Leeks, doz. bunch.	1 6 —	dozen ...	2 6-4 0
Lettuce, Cos, per		— in bags, good...	3 0-3 6
doz. ...	2 0-3 0	Watercress, p. doz.	
— Cabbage, doz. ...	1 6-2 0	bunches ...	0 3-0 6

POTATOS.

60s. to 85s. per ton. John Bath, 52 and 84, Wellington Street, Covent Garden.

REMARKS.—On Monday morning last a slight frost was general in the Thames valley and Middlesex. The Plums Victoria, and Black Diamond will about finish this week; the Prunes from Bucks have commenced to come in, also the "Switzens" from the Rhine. These Switzens are like our Muscat Plum. Tomatoes are easier in price; the loose Horse Radish from Lincoln and Cheshire is coming in. Many of the Brussels Sprouts are infested with fly, and the best Cabbage supply is coming from the North.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms	3 0-4 0	Mignonette, per 12 bunches	2 0-4 0
Carnations, pr. doz. blooms	1 0-2 0	Orchids:—	
Chrysanthemums, white, 12 blooms	1 0-3 0	Cattleya, 12 bms.	5 0-8 0
Chrysanthemums, yellow, 12 blooms	1 0-3 0	Odontoglossum crispum, 12 bms.	2 0-4 0
Eucharis, per dozen	3 0-4 0	Pelargoniums, scarlet, per 12 bun.	4 0-6 0
Gardenias, per doz. blooms	1 0-2 0	— per 12 sprays	0 4-0 6
Gladioli, white, doz. sprays	0 8-1 0	Roses, Tea, per doz.	0 6-1 0
Lilium Harris, per dozen blooms	3 0-4 0	— yellow (Pearls), per dozen	1 0-2 0
Lily of the Valley, dozen sprays	1 0-2 0	— pink, per dozen	1 6-2 0
Maidenhair Fern, per 12 bunches	4 0-8 0	— Safrano, p. doz.	1 0-2 0
		— red, per dozen	0 6-1 0
		Stephanotis, doz. sprays	1 0-1 6
		Tuberose, 12 blms.	0 3-0 6

ORCHID-BLOOM in variety.

SEEDS.

LONDON: September 21.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that, as might be expected, the sale for Trifolium is now rapidly falling off. New English Winter Tares are cheap, good, and abundant; Rye, however, being in short supply, and much wanted, is dearer. Sowing Rapeseed realises full prices. New home-grown white Mustard exhibits fine quality. For Blue Peas and Haricot Beans there is more inquiry. Canary, Millet, and Hemp seeds present no fresh feature. The new English Broad Beans come good and cheap.

FRUIT AND VEGETABLES.

GLASGOW: September 21.—The following are the averages of the prices recorded since our last report:—Grapes, English, 9d. to 1s. per lb.; Muscats, 1s. 6d. do.; Scotch, 1s. 3d. do.; Guernsey, 4d. to 5d. do.; Apples, American, 16s. to 20s. per barrel; do., Canadian, 16s. to 20s. do.; do., English, 10s. to 20s. per cwt.; Plums, Victoria, Cambridgeshire and Kent, 14s. to 20s. per cwt.; do., Edinburgh, 2s. 6d. per sieve; Lemons, Naples, 16s. to 25s. per case; Melons, home, 2s. to 2s. 6d. each; Pears, Havre Williams, 5s. to 6s. per case; Oranges, 1s. 6d. to 2s. per dozen; Onions, Valencia, 4s. to 6s. per case; do., Dutch, 3s. 3d. do.; Cucumbers, 2s. to 3s. 6d. per dozen; Tomatos, Scotch, 6d. to 8d. per lb.; English, 4d. do.; Guernsey, 3d. do.; Cabbages, 7d. to 10d. per dozen; Cauliflowers, 2s. 6d. per dozen; herbs, 1d. to 2d. per bunch; Mint, green, 6d. to 9d. per bunch; Parsley, 1s. to 1s. 6d. per stone; Potatos, best, 1s. do.; Lettuces, 6d. to 9d. per dozen; do., Cos, 9d. do.; Radishes, 1s. 6d. per dozen bunches; Horseradish, 1s. 6d. per bundle; Mushrooms, 6d. to 1s. per lb.; Beetroot, 4d. to 5d. per dozen; Mustard and Cress, 3d. per punnet; Turnips, white, 2d. to 3d. per bunch; Celery, Scotch, 1s. 6d. per bunch.

LIVERPOOL: Sept. 21.—St. John's: Potatos, 10d. to 1s. per peck; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 4d. do.; Pine-Apples, English, 4s. to 5s. 8d. each; Damsons, 3d. per lb.; Cob-nuts, 10d. per lb.; Cucumbers, 3d. to 4d. each; Mushrooms, 1s. per lb.; do., 1s. per basket. Wholesale Vegetable Market: Potatos, Giants, 1s. 6d. to 2s. 2d. per cwt.; Main Crop, 2s. 4d. to 3s. do.; Bruce, 2s. to 2s. 6d. do.; Turnips, 6d. to 8d. per dozen bunches; Carrots, 6d. to 8d. do.; Parsley, 4d. to 6d. do.; Onions, English, 6s. to 7s. per cwt.; do., foreign, 2s. 6d. to 3s. 3d. do.; Cucumbers, 1s. to 2s. 6d. per dozen; Cauliflowers, 8d. to 1s. 6d. do.; Cabbages, 6d. to 1s. 2d. do.; Celery, 1s. to 2s. do.

CORN.

AVERAGE PRICES OF BRITISH CORN (per imperial qr.), for the week ending September 17, and for the corresponding period of 1897, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1897.	1898.	Difference.
	s. d.	s. d.	s. d.
Wheat	33 10	25 7	— 8 3
Barley	28 11	26 10	— 2 1
Oats	17 0	16 10	— 0 2

GARDENING APPOINTMENTS.

MR. H. ATTFIELD, for the past seven and a half years Gardener to the Right Hon. Lord STANLEY, at Cowarth Park, Sunningdale, as Gardener and Bailiff to Sir GEORGE FROST, Bart., Warfield Grove, Bracknell, Berks.
MR. T. JIGGLE, as Gardener to ENGLISH HARRISON, Esq., Q.C., Gosmore, Hitchin, Herts.
MR. E. HERRING, late Gardener at Rous Leuch Court, as gardener to J. T. FORMAN, Esq., Wilford House, Wilford, near Nottingham.
MR. F. W. CAVILL, of Derwent Lodge Gardens, Cockerinmouth, as Gardener to H. B. MILDWAY, Esq., Flete, Ivybridge, South Devon.
MR. T. T. WHITTELL, until recently at High House Gardens, Orford, as Head Gardener to H. D. PALMER, Esq., Stour Bank, Nayland, Colchester.
MR. J. MACK, for sixteen years at Drayton Manor Gardens, Tamworth, has succeeded Mr. RYE as Head Gardener to Lord HARRIS, Belmont, Faversham.
MR. WM. WALLACE, late Foreman of Clumber, Worksop, Notts, has been appointed Head Gardener to HUGH COLINS SMITH, Esq., Mount Clara, Rushampton, Surrey.

NOTICES TO CORRESPONDENTS.

ADDRESS WANTED: If H. S. will kindly send his full name and address, not necessarily for publication, but to constitute his *bona fides*, we may insert his article on Cactus Dahlias.

ARAUCARIA IMBRICATA GUMMING: J. H. We fear that unless you can very effectually drain the land under and around the tree, or remove it to a dry place, or raise it on to a mound 2 or 3 feet above the surrounding level, the tree will succumb to the gumming. Araucaria imbricata dislikes a wet impervious soil.

BEGONIAS: G. Tourret Grignan. Flowers such as you mention are by no means uncommon, and have been noted in these columns and in teratological works.

BOOKS: Milner's Landscape Gardening: J. W. The publishers are the Messrs. Simpkin, Marshall, Hamilton, Kent & Co., Stationers' Hall Court, London. We do not know the price of the work.

CHRYSANTHEMUM FLOWER-BUDS SPOILED BY INSECTS: W. T. Before we can tell you the name of the insect or insects which occasion the damage, you must catch some and send them to us for identification. There are various plant-bugs which sometimes injure the flower-buds, and the earwig is a pertinacious offender in this respect, as is also the caterpillar of the Dot moth, Noctua persicaria.

CHRYSANTHEMUM LEAVES AFFECTED WITH FUNGUS: A Lady Gardener should read the note which appeared on this subject in our issue for Saturday last, p. 228, 1st column, under similar heading to the above. See also *Gardeners' Chronicle* for October 9, 1897, pp. 256 and 260.

CUPRESSUS ERECTA VIRIDIS: R. E. Cuttings of most species of Cupressus root with difficulty. When the cuttings have formed a callus, they should be re-bedded in a fresh sand-bed, or in pots, the change accelerating the formation of roots. In the case of cuttings put in last autumn, this operation would be called for in the spring. A mild degree of bottom-heat hastens both callusing and rooting, but it should not exceed 75°. Cuttings of Cupressus having a total length of 6 inches should not be inserted to a greater depth than 1½ inch.

CUTTING BACK ROSE SPOCKS: Sceptic. The stocks (Briars) should be kept denuded of all growths (unless the stocks are weak), excepting the two or three that are budded, which should not be shortened until all danger of the inserted buds starting to grow is at an end, when a slight shortening, in order to prevent injury by wind may be performed; or they may, instead, be bundled up together. In the spring the wilding shoots should be cut close back to the buds.

FRUITING OF STEPHANOTIS FLORIBUNDA: Rex. The fruiting of this stove-creper is by no means uncommon. The fruit is poisonous, as doubtless are other parts of the plant.

GUMMING OF A PLUM-TREE: Oak. The gumming is probably set up by hard pruning following excessive growth of shoots. If that be so, root-pruning will check this exuberant growth, and the resultant better cropping of the tree will tend still further to do so. Mix with the staple when replanting, after pruning the roots, a good proportion of mortar-rubble and charred soil, and afford no manure. Sometimes gumming is induced by a fungus, Nectria ditissima, which enters the tissues at the wounds caused by the knife in pruning. It is then difficult of cure, but by cleaning out gummed places, and using a thick paint of sulphur, clay, and soft-soap in the winter, it can be eradicated in a season or two. Trees liable to gum should have most of the pruning done to them in the early summer months, so that in the winter there is little pruning with the knife necessary.

INSECTS: W. Treseder. 1, The mining larvæ of Gracilaria syringella, a minute moth, found also on Lilac and Ash; 2, a young Noctua larva, not recognised; 3, Agrotis segetum, or exclamationis, both very common and destructive; 4, an ichneumon fly, parasitic on larvæ feeding in wood; 5, not recognised. R. McL.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—J. Kemp. Phytolacca decandra, the Virginian Poke-weed.—X. Y. Z. 1, Gesnera zebrina; 2, Begonia corallina; 3, Dracæna hybrida; 4, Dichorisandra vittata, so far as

we can judge from a discoloured leaf; 5, send flowers; 6, Peperomia argyræa.—Capt. S. S. Stanhopea oculata. Interesting on account of its being flowered from an imported seedling.—M. E. 1, Torilis anthriscus; 2, Tordylium maximum; 3, Poterium officinale; 4, Centaurea nigra; 5, Stellaria uliginosa; 6, Leontodon hispidus.—J. Hibiscus Manihot.—H. D. 1, Cratægus, not recognised; 2, Rhamnus Frangula.—A. S. Cuscuta European Dodder.—W. J. T., Exeter. Lobelia fulgens.—F. H., Sheffield. Eonymus macrophyllus argenteus.—H. V. 1, Polystichum angulare, quite hardy British Fern; 2, Helianthus decapetalus; 3, Helianthus doronicoides; 4, Helianthus rigidus; 5, not found; 6, Stachys lanata; 7, Corydalis lutea.—C. M. 1, Polygonum orientale; 2, specimen insufficient; 3, Clerodendron Bungei; 4, Selaginella Wildenovi; 5, Allium cepa var. aggregata (Potato-Onion).—G. W. Arctotis aspera var. arborescens, illustrated in Bot. Mag., t. 6528.—E. S., Woking. Erythraea centaureum.—Sceptic. Colchicum autumnale.—T. B. Cratxgus coccinea.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

D. N. R. Apples: 1, Warner's King; 3, Hawthornden; 5, Yorkshire Beauty; 4 and 9, Dumelow's Seedling; 6 and 7, Lord Derby; 8, Emperor Alexander; 10, Yorkshire Beauty; 11, Warner's King; 12, Worcester Pearmain; 13, Gloria Mundi; 14, Wareham Russet. Pears: 2, Pitmaston Duchess; 4, Durondeau; 5, Hesse; 7, Summer Fran: Real; 8, Beurré Diel; 10, Williams' Bon Chrétien. Some of these Pears were too ripe.—Thos. F. Webb. Plum: Mitchelson's. Apple: 2, Pomme de Neige. Pears: 1, Bergamot d'Esperen; 4, Comte de Lamy; 5, Beurré Bachelier.—Yeatman. Large Pear is Catillac; small one not known.—Lawrence & Sons. The Pear-shaped Apple you send us must proceed from the stock. It is quite distinct from Keswick Codlin, being quite acid; whilst Keswick Codlin is sweet and pleasant eating.

THERMOMETER: Frost. The thermometer will of course only indicate the temperature of the place where it is exposed, provided always that it registers correctly.

TOPPING THE "GRASS" OF CARNATION LAYERS: Correspondent. It is probably performed with the idea of checking the flow of sap to the leaves, and assisting thereby in the formation of a callus, and subsequently of roots. It serves also to indicate the layered shoots. But seeing that layers grow just as well when untopped, and other means can be used to mark the layers, the practice is uncalled for.

WOODLICE: Frere & Co. The simple remedy of pouring boiling water into their haunts is as good as any if followed up. All litter and light rubbish likely to afford hiding-places should be cleared away. Richard's XL-ALL, which is fatal to all insects, might be tried.

COMMUNICATIONS RECEIVED.—H. G. H.—R. P. B.—E. Webb & Sons.—D. T. F.—D. Nicoll.—R. C. J. & A. J. G.—H. R. W.—G. Fry.—F. Twyford.—W. R.—A. Long Subscriber.—H. H.—E. S. G. B. M.—W. S.—D. Kidd.—W. L., Glasgow.—G. S.—J. S. W.—G. D. W. B.—L. K.—W. S. A.—H. W.—J. B. & Sons.—Lay, Kent.—S. S.—X. Y. Z.—Constant Reader.—M. E.—T. W. W.—Amateur.—J. Shaw.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—H. W.—C. R. De la Salle (acknowledgment delayed).

DIED.—On September 2, 1898, at Woodhouse, Loughborough, Leicestershire, JAMES MACLEAN, in his eighty-sixth year. Formerly head gardener at Beaumanor Park for forty years, retiring in 1885.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, MORE THAN DOUBLED, and that it continues to increase weekly. Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is reserved for reference in all the principal Libraries.

(For Weather, see p. xiii.)



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 1, 1898.

ANOTHER FRUIT ENEMY.

A newly-introduced Scale-insect (*Diaspis (Aulacaspis) amygdali*), its Introduction, Description, Distribution, and the Means of Combating it.

IT may be well to state at the commencement that this pest is quite distinct from the San José scale-insect (*Aspidiotus perniciosus*, Comstock) of the American fruit-growers, which up to the present moment has engaged the attention of the whole fruit-growing industry of the world. But it belongs to the same destructive family of scale-insects (Coccidæ), and being of western Asiatic origin, inhabiting a region with a climate somewhat resembling our own, gives us far greater cause for alarm than did its sub-tropical relative—the San José scale. We, therefore, beg to lay before the British public an account of its introduction into this country, together with a description of the insect, of its general distribution in other parts of the world, and of its destructive character, in the hopes that by such means we may not only assist the fruit-growers in identifying the insect, but gain by their united efforts in the speedy destruction of this newly-introduced pest.

HISTORY OF INTRODUCTION.

In January of the present year a consignment of several hundred Japanese Cherries (*Prunus pseudo-cerasus*) was imported into this country from Japan, which ultimately fell into many hands, and were disseminated over the British Isles without any knowledge they were badly infested with scale. In the following April two of the plants from the consignment were submitted to the writer for the purpose of identifying the insects upon them, which proved to be the destructive scale-insect, *Diaspis amygdali*, of Tryon.

On enquiry it was found that the greater number of the plants of this particular batch (100) had been planted outdoors since the time of their arrival; and, as the examination proved, the insects were not in any way affected by their change of climate, but appeared in a perfectly healthy condition. Information was at once forwarded to the correspondent as to the serious nature of the pest, with a request that the plants be at once destroyed. This, however, was not carried out; but measures were taken to destroy the insects by dipping the whole 100 plants in a hot paraffin emulsion, in the hopes the insects would not survive such drastic treatment. And so the matter rested until June 3, when the correspondent again informed the writer that a recent examination of the plants had been made, when it was found the insects

were still living, and it was thought another application of the insecticide would have completely destroyed them; but instead of temporising, the plants were all burnt. This was much the wiser plan, as we have the satisfaction of knowing the insects on this particular batch of plants are completely destroyed, and this, too, before the young ones (larvæ) had time to

should be taken to prevent any further importations of infested plants into this country, which can only be done by an inspection of them on arrival, and before they have been dispersed throughout the country.

DESCRIPTION OF THE INSECT.

To the unaided eye the scale or covering-shield of the female (puparium) is more or less circular, and closely resembles the common Rose-scale (*D. rosæ*); but is of a dusky white, the old examples being smoky grey or ochreous, and harmonising with the colour of the bark. They are of the size of an ordinary pin's head, and measure from 1 to 2 mm. (fig. 66, A, B). Beneath this scale the wingless, legless, inert, fixed body of the female undergoes its transformations, lays its eggs, and dies. For the purpose of identification it will be necessary, briefly, to describe the salient characters of the female (fig. 66, D), which alone affords us the means by which we can separate it from the numerous allied species belonging to the same sub-family. It is necessary first of all to boil the insect in caustic potash, stain, and ultimately mount in Canada balsam, when we shall find the margin of the tail (pygidium, fig. 67), which is composed of several segments, to be curiously fringed with spines and lobe-shaped organs. In the central position above is the anal orifice, and a number of cylindrical tubes connected with the derm, and it is through these latter that the scale-covering, or shield, is secreted. On the ventral surface is the vaginal opening, and surrounding it are five groups of circular spinnerets. As none but the expert student can discern the minute structural differences between species and species, it is useless here entering further into detail concerning them.

The covering scale of the male (fig. 66, C) is pure white, narrowly elongate, and much smaller than that of the female. Within this covering which somewhat resembles the finger of a glove, the insect undergoes its transformations, appearing in due season as a very tiny two-winged fly, having an orange-coloured body.

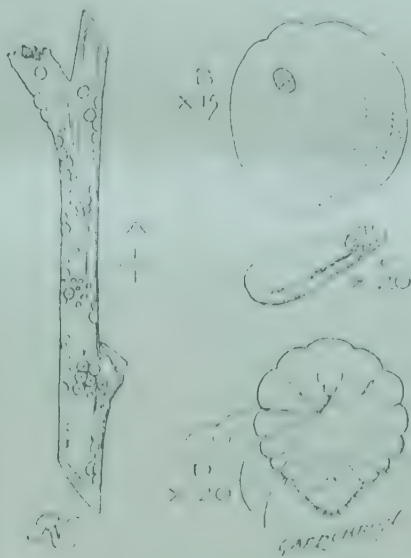


FIG. 66.—DIASPIS AMYGDALI (Tryon).

A, Insects of real size on branch of food-plant; B, Scale of the female, magn. 15 diam.; C, Scale of the male, magn. 20 diam.; D, Female removed from the scale, magn. 20 diam. (Original.)

hatch and migrate to other plants. In whose hands the remaining plants have fallen, has yet to be discovered,* and we earnestly appeal to all those who purchased Japanese Cherries from the same consignment to at once com-



FIG. 67.—DIASPIS AMYGDALI: TAIL (PYGIDIUM) OF THE FEMALE, MAGN. 250 DIAM. (Original.)

municate with us, at the same time sending examples of the insect for identification.

But numbers of foreign nurserymen import Japanese Cherries, &c., and in order to prevent a repetition of this, the most stringent measures

* Privately, I have ascertained the name of one firm who imported large quantities of the plants.

DISTRIBUTION.

It was originally discovered by Professor Tryon in Australia on the Peach. Mr. Green records it from Fiji, and says that in Ceylon it feeds on many species of plants, but that it is partial to the Pelargonium. Professor Cockerell found it injurious to a large number of plants in Jamaica, including the Grape

and Peach. The same author also received it from Trinidad. It was in 1892 that it first attracted attention in the United States, where it is a serious pest to the Plum and the Peach. It was also found there on a dwarf-flowering Almond and fifty Teabushes imported from Japan; the latter were destroyed (*vide Psyche*, March, 1898, pp. 190, 191). Professor C. Sasaki, of the Agricultural College, Tokyo, describes it (under another name) as a pest to the Mulberry-trees in Japan. Seeing that the insect was originally discovered in Australia, it might be suspected to be indigenous to that country; but I agree with Dr. L. O. Howard and the late Dr. C. V. Riley (*Insect Life*, vol. vi., pp. 287-295), that Japan is very probably the original home of the species, as we have now three authentic instances of its occurrence on freshly-imported plants from that country.

REMEDIES.

As the examples found in this country withstood the severe treatment of the hot paraffin emulsion, and as we are informed by the United States entomologists that it will survive anything but pure kerosine, our wisest course by far is to burn the infested plants. Undoubtedly the insect must be regarded as a dangerous species, which, if once established, would be difficult to eradicate, owing to the diversity of food-plants, and its decidedly hardy nature. *Robert Newstead, Grosvenor Museum, Chester.*

SEEDLING CAMELLIAS.

Now is the time to make sowings in broad pots or deep pans filled with sandy loam three-quarters, leaf-mould one quarter, and having a moderate amount of drainage materials in the bottom, as an excessive quantity renders the soil too dry for the vegetation of the seeds. The seeds should be dibbled in about half-an-inch deep, and 1 inch apart, the soil being made at the same time quite firm in every part, as well as smooth on the surface. The pans may be placed in a shady part of a cold pit, wherein frost is not allowed to enter, and the soil kept uniformly moist. The seeds will germinate by the arrival of spring, when a light place near the glass may be afforded them, taking the precaution to shade them from strong sunshine. Such plants form in two or three years excellent stocks for carrying grafts of named varieties; or to grow on, under ordinary greenhouse treatment, for flowering purposes.

THE EFFECT OF THE GRAFT ON THE FLAVOUR OF THE FRUIT.

The influence of the graft on the Grape-vine was discussed in these columns a short time ago, and a correspondent suggested the record of observations relating to the effect of the operation upon the taste of the fruit.* It is a suggestive and an instructive fact that no further information on this point has been published, for, however difficult it may be, by means of carefully-conducted experiments, to trace the reciprocal effect of the scion on the stock, and *vice versa*, as regards accurate results in general, still more difficult is it to obtain authentic data relating exclusively to the sense of taste which, in this connection, is so easily deceived by the eye and by the imagination.

That the graft does exert some influence on the taste of the fruit appears indisputable from the classic experiments of M. Daniel, to whose work reference has frequently been made in this journal. He has recorded, for instance, that when the black Belgian Haricot, whose pod has an agreeable taste, is grafted on a Soissons Haricot, which has a particularly disagreeable flavour, the Bean which is produced on the grafted plant acquires to a pronounced degree the taste of the fruit of the plant which has been used as the stock. Similarly, he has shown that when the Savoy Cabbage is grafted on the Turnip, the former acquires the very characteristic taste of the latter plant.

In each of these cases, however, the observer dealt with a plant possessing a particularly marked

taste, which was consequently the easier to detect; hence it is much more difficult to trace the effect of the graft in relation to plants the taste of whose fruit has a certain affinity, and which has not, as in the case of, say, the Onion family, any marked and distinguishing characteristic.

The most interesting work, as regards the importance of its results, which has ever been undertaken in horticulture in connection with the graft, is undoubtedly that which relates to the reconstitution of vineyards destroyed by the phylloxera. Certain American Vines whose roots resist the attacks of the insect are employed as stocks, whereon are grafted native Vines, which, thus protected, continue to yield fruit "after their kind." Now, it is an important and admitted fact that, apart from certain other results to which allusion need not now be made, the graft of European on American Vines does not alter the quality of the wine. The soils which gave noted wines under the old *régime*, says M. Ravaz, the Director of the Viticultural Station at Cognac, yield the same product with Vines grafted on imported stocks, and nothing is changed from this point of view. Similarly, in his work on *The Principal Varieties of Vines*, M. Cazeaux states that whilst grafting on American stocks may deepen the colour of the Grapes, and of the red-wine produced therefrom, whilst the maturity of the fruit may thereby be improved and hastened, the operation of the graft does not affect the taste, or the perfume, or the bouquet of the produce; and other authorities might be quoted to the same purpose.

It does not, however, follow that the operation of the graft has no effect whatever on the taste of the fruit, merely because the quality of the wine which is produced retains its old established reputation, inasmuch as recent experiments with other plants tend to show that one of the effects of the graft, when suitably applied, is indeed to ameliorate the savour of the fruit. A full account of experiments which corroborate this statement has been recorded in these columns,* where it was stated that "fruit-trees in general, and certain Pear-trees in particular, undergo changes according to the nature of the stock. The taste of the fruit, for instance, varies when the scion is grafted on Pear-stock, and when it is grafted on the Quince."

It must, moreover, be remembered that the theory of the graft has been completely altered during the present decade. The orthodox opinion on the subject implied that hereditary variation was purely of sexual origin, and, in a text-book which was published less than seven years ago, one of the most distinguished European botanists stated that the graft is a valuable means of fixing and conserving all the variations introduced into the embryo, because the process itself does not produce the slightest variation.

A very important communication on this subject was read at the recent horticultural congress in Paris, and afterwards at the Académie des Sciences. The author, M. Daniel, gives a *résumé* of all the experiments which he has made relating to the reciprocal influence of the scion on the stock, and *vice versa*, including the effect on the taste and quality of the fruit.

The fact which gives so much value to M. Daniel's experiments is due to their comparative character, that is to say, the grafted plant has in each case been grown side by side with a normal plant. Now, however interesting any single result of the graft may be, it loses all its value, says M. Daniel, unless it be compared with a control plant, grown under exactly the same conditions as the grafted plant (the operation itself excepted), hybridisation being of course avoided. This factor, however, implies an amount of labour and patience—not to mention expense—which are quite beyond the means of the ordinary horticulturist, and it is to the absence of this comparative element that M. Daniel attributes "the old-established legend of the graft, the outcome of contracted observation, of results wrongly interpreted."

However it may be, M. Daniel has grown his plants and conducted his experiments in the full light of day, under the eye of well-known scientific men who

bear witness to the genuineness of the work. It is not possible to give more than the following abstract of the results, which have, moreover, been published in detail in the *Mémoires* of the National Horticultural Society of France:—

1. The reciprocal influence of the scion and of the stock cannot be denied, even though it may not always act with the same intensity.

2. This influence may bear on the general nutrition of the plant, and indirectly on its size, vigour, and resistance to parasites; or it may affect the internal and external morphological character of the plant including its organs of reproduction, e.g., the fruit.

3. Those variations are frequently of an hereditary character, and appear during the course of the second generation.

4. This effect of the graft offers several practical advantages, viz., the production of larger and "better" fruit and vegetables (such as an improvement in their taste); and the direct production of new varieties, e.g., a modification of the colour of flowers, of the shape of fruit, &c.

5. The effect is more marked in herbaceous than in ligneous plants, and on the progeny of the grafted plant than on the plant itself.

6. The graft, which produces variation in the seed, may be employed to produce new varieties. The variation may frequently be diverted culturally, so as to impart, almost assuredly, after repeated graftings, certain qualities (taste, shape, colour, &c.), to a plant which did not originally possess them, and which varies easily under cultivation. As regards other plants, the graft still affords the means of obtaining variation, however difficult it may be; and as soon as the change is observed, it can be pursued in the desired direction, and with good results. *Scion.*

HARDY BAMBOOS.

(Continued from p. 212.)

PHYLLOSTACHYS FULVA, *Mitford* (fig. 68, p. 247).—A most pleasing Bamboo newly-introduced from Japan, having the colouring of *Phyllostachys aurea*, with the graceful habit of *P. Henonis* and *P. Boryana*. The native name is Ogon-chiku ("the golden Bamboo"). As the name "aurea" has already been taken, I have chosen "fulva," Virgil's epithet for gold, as being nearest in touch with the native name. In the *Shoku-butsu-Mei*, a synopsis of Japanese and scientific plant nomenclature, published by Mr. Matsumura, Professor of Botany in the Imperial University at Tokio, *Phyllostachys sulphurea* is given as the equivalent for Ogon-chiku; but the plant to which the name *P. sulphurea* has been given by Rivière (*Les Bambous*, p. 285) is quite distinct—at any rate from Ogon-chiku in a young state. The characteristic yellow colour of the stems is not fully developed until their second year, as is the case with the black stems of *P. nigra*. *A. B. P.-M.*, September 13, 1898.

THE CULTURE OF MELONS IN FRANCE.

ALTHOUGH claimed to be of East Indian origin, the Melon, whose botanical name is *Cucumis melo*, is to be met with in all warm and temperate climates. It is the form of the fruit and its skin that have led Melons to be divided into two general classes by the French, namely, "Cantaloups" and "Brodès." It is said that it is to some Armenian monks that Europe is indebted for the introduction of the fruit. They brought seeds to Europe in the middle of the sixteenth century, and sowed them in the Papal Palace Garden of Cantaluppi, at Rome. A century later the Melon became known in France. Columbus is said to have taken seeds of the Melon to America.

The wide range of varieties of the Melon may be best understood from the fact that its fruit varies from the size of a table Orange up to a weight of 66 lb. Owing to the facility with which the flowers can be crossed it is difficult to preserve any type pure for any length of time, no matter what precautions be exercised. If two varieties be raised near to one another, they will cross. Hence the origin of the multitude of varieties. The Cantaloups are generally large fruits, having deep furrows which divide the

* *Gardeners' Chronicle*, vol. xxiii., June 25, 1898, p. 397.

* *Gardeners' Chronicle*, March 27, 1897, p. 206.

cortical part into segments. These are covered also with protuberances, and raised lines that differ both in form and colour. The flesh is succulent, perfumed, sweet, and of an agreeable flavour. The hybrids are all fertile, and the plant bears male and

deep green spots on the rind. The Cantaloupe d'Algers is longer than it is broad, and the fruits are produced varying from 4 to 7 lb. It is of a dark green colour on a white base, and the surface is full of inequalities. The Cavaillon, from Avignon, is

loam, consisting of silicious sand, clay, oxide of iron, and carbonate of lime, suits the plant. When grown under frames or bell-glasses, the soil ought to possess a temperature of 70° to 80° Fahr. The market gardeners about Paris prefer manure from the stables of

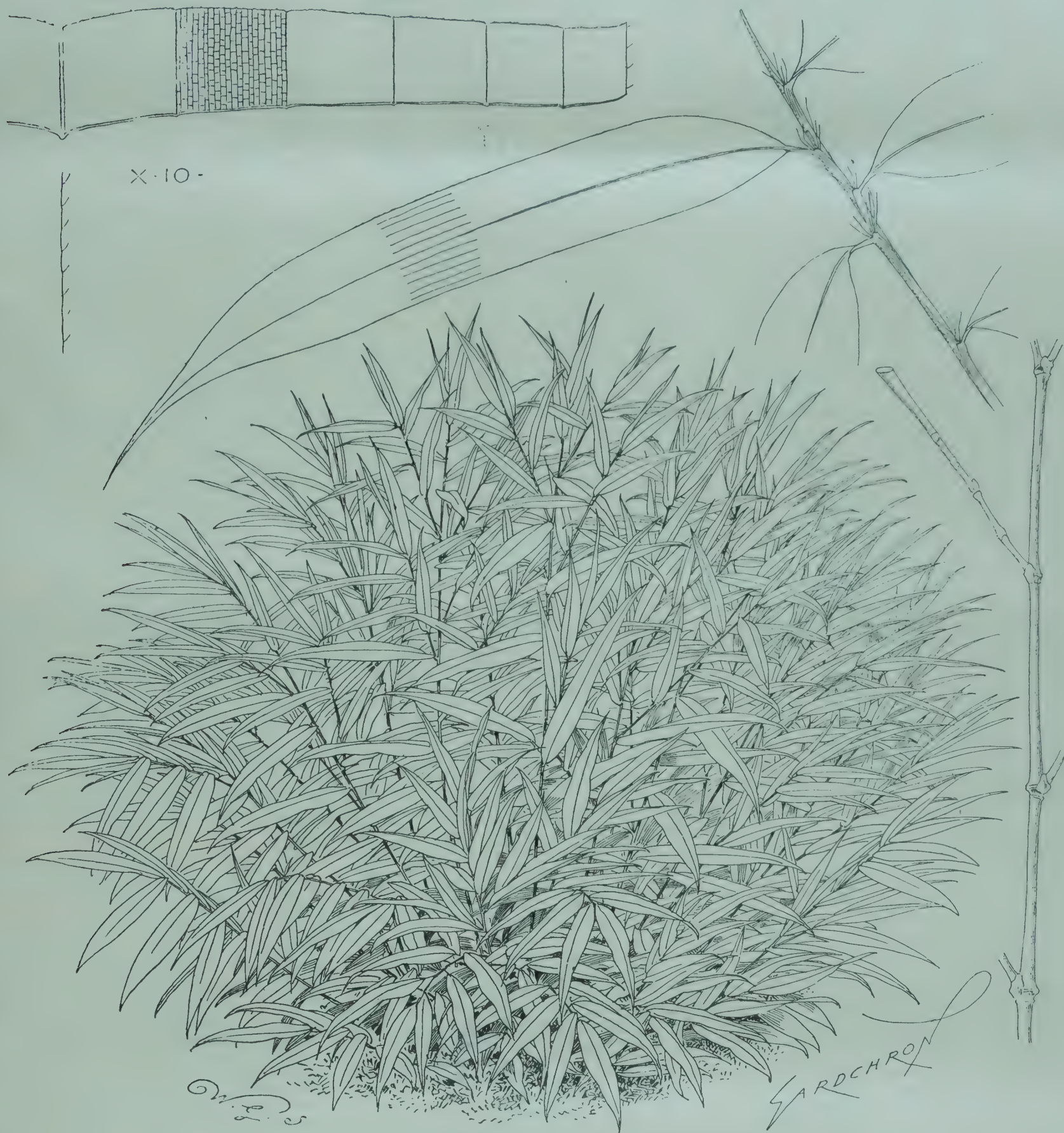


FIG. 68.—PHYLLOSTACHYS FULVA. (SEE P. 246.)

female flowers. In the region round Paris the Cantaloupe variety is preferred by the market gardeners, the Prescott variety especially, which has generally a diameter of 12 inches. The black "Des Carmes" Melon, a plant of rapid growth, and adapted to forcing, has a diameter of 6 to 7 inches, and displays

an open-air variety, and is peculiar to the south of France. Its shape is oval, and its colour deep green; the flesh is either white or green, firm, melting, and sugary. It is a late variety, like the Malta.

Even when well manured the Melon does not succeed on a very light soil; a rich friable soil, such as

the omnibus company, as it ferments readily, but decays slowly, while maintaining an equable temperature. The manure of the ass, mule, poultry, and sheep is also good. Place some heather or bracken in the heap, so as to allow air to enter, and let one-fourth of the manure be fresh, so as to induce heat.

Tree leaves may be mixed with the manure, but no leaf-mould should be used in the soil of which it consists. The beds are made up at the end of the month of December; in any case, the beds ought to be prepared eight or ten days before sowing the seeds, so as to allow the first rank heat to subside. Melons can only be raised round Paris under glass, because in order to vegetate and fructify they require a constant, high temperature. Thus forced, they succeed, but only if the temperature is not permitted to fall below 77° to 86°, as to do that would ruin the crop.

Melon seed will retain its vitality for seven years at the least. Around Paris the seed is sown in the course of the month of January, chiefly towards the close, when the bed or frame has parted with its first heat, that is, diminished by about 9°. Earlier sowing does not lead to success, as the young plants suffer from lack of light. The frames are made either of Oak or iron; the latter have the advantage of folding up, and of being easily stored away when no longer in use, but they are colder than wood. To have a succession of Melons, the sowings are continued in the middle of the months of March and April, early and semi-early varieties being sown, so as to secure a succession of fruits. The seeds are sown three times more than are required in two shallow parallel drills made in the soil of the bed, and covered over with 1 inch of leaf-mould; thick matting is placed over the glass till germination takes place—a matter of six to eight days. If the heat be well distributed, the plants will make rapid progress, and develop the terminal shoot between the two cotyledons. Then transfer with great care the delicate plant, whose roots are very fine, either into a separate frame, or into 3-inch wide pots. The plan is very general to sow the seeds directly in small pots sunk in the bed, and then to repot into other pots of a larger size, observing carefully not to break the ball of earth, and thereby injure the roots. The main stem should have the tip nipped or cut off with a penknife above the third leaf, to induce branching out, the branches will soon become covered with flowers, both male and female. After pinching or cutting off a branch, scatter a little dry earth or ashes over the wound. The Melon is affected by cold and humidity together. Regulate the admission of air with much care, or the flowers will fall prematurely. When the fruits appear, the most promising are selected, and two per plant are generally allowed, and on opposite sides. One plant to 4 square feet under a frame is sufficient.

When the fruit commences to swell, the soil of the bed is covered with a thin layer of straw, to prevent a too rapid loss of moisture, and the quantity of water afforded is moderate, any excess producing decay. Underneath the developing fruit, a piece of slate or tile is placed, and air is freely admitted to the frame, only it is gradually increased in amount, and in accordance with outside conditions. Without fresh air the blooms will not set, and without sunshine the fruits have no flavour. In the South of France and Algeria, the Melon-plants are dibbled out directly from the nursery-beds into the fields, just like Cabbage-plants. Young Melon-plants should neither be too near nor too distant from the glass, and much humidity must be avoided by opening the frame for a little while daily. In cold weather the case must be covered with straw mats, then a layer of litter, and lastly, with a coarse straw mat. In this state the plants may remain, if necessary, for a month. Execute the work of transplanting, whether into pots or otherwise, during fine weather; if humid or wet, wait a day or so. After removing from the pot, cover the young plant with earth up to the cotyledons; many growers pour a little water over each plant, and envelop the frame with matting till such time as vegetation be resumed—a matter of eight days. Others, again, pile fresh manure round the frame, so as to secure extra heat. When the stem of the Melon commences to lengthen, the bed is covered over with a few inches of fresh manure; this process is said to secure heat around the roots, as the latter tend to rise to the surface of the bed.

Southerly winds are favourable to the culture of Melons, and as the fruit increases in volume, so turn it on the slate or tile every three or four days, in order to let it benefit all round by the sun's rays. When the frame is removed for good, select the close of a dull, cloudy day, first acclimatising the plants gradually to full exposure. A border having a southern aspect, and situated at the foot of a wall, is considered as a good site for Melon-beds. Fifteen years ago the market-gardeners at Doulon, near Nantes, in the west of France, cultivated the Cantaloupe and Brodé varieties of Melons in the open fields, but the culture has been abandoned. At the end of February the soil was turned up by the plough, and in April the Melon-seed was sown on heaps of manure, 2 to 2½ feet thick; all was covered over at night with matting. This was the nursery. Early in May the Melon-plants were dibbled into the re-ploughed and freshly-manured land; a few rough pinches to the stems were given in due course, and the reaping-hook cut away the stems when too entangled. In August and September the crop was ripe. The variety sown and grown in this rough manner belonged to the Brodé group, known as the Sucrin de Tours; it was a delicious fruit, of a powerful odour, but if the autumn chanced to turn out wet the Melons split, and the whole turned out a failure.

At present, in the south of France, the Melons grow in the open fields, no special care being given to their culture, and that is precisely what impairs their quality. Melons intended for export are gathered three days in advance, just when ripening commences. A Melon seldom keeps beyond a week, but if wrapped up in a moist cloth, and placed in a cool situation, it will remain fresh for a month. The plant is attacked occasionally by insects; however, a solution of tobacco soon extirpates them.

A good Melon ought not to be either too green nor too yellow: if the former, it is not ripe; if the latter, it is evidently too ripe, and will be devoid of flavour; if light, it is hollow, and juiceless. Before eating a Melon, let it lie in fresh water for a few hours. A Melon is mature when the colour becomes clear, and the odour perceptible.

At the close of June the season for Melons commences; then an excellent fruit, medium-sized, will readily command 25 francs. The close of the season is the first week in September, when the best Melons can be had for 1 franc. The Melon is not a fruit intended for either delicate or anæmic stomachs; but all persons requiring a stimulant, naturally robust, and capable of digesting liqueurs, can safely indulge in the fruit. In France, Melons are eaten either with pepper and salt, or with sugar; Dehaën recommends to mix or add "a little tobacco"! From its laxative virtues (its mucilage and essential oil), the fruit is accepted as excellent against constipation. *Edward Conner.*

THE ROSARY.

AUTUMN-FLOWERING ROSES.

THOSE Roses can hardly be described as true perpetuals, which do not bloom freely during the autumnal months. There are, unfortunately, not a few whose capabilities in this direction are extremely small; they are for the most part indifferent growers, and consequently are quite valueless from a floral point of view at this season. Horace Vernet, for example, which has been so highly and justly estimated for its beautiful colour, grows so very badly that it is of no service, at least in my own garden, after its first efflorescence, and might almost be accounted for this special reason a summer variety. On the other hand, such excellent hybrid perpetuals as A. K. Williams, Crown Prince, Charles Lefebvre, Duchess of Bedford, Madame Victor, and Margaret Dickson, which may be regarded as representing the *élite* of this important and extensive class, are finer at present than they have been this year.

Perhaps the most valuable of all autumnal Roses are the hybrid Teas. Their flowers for the most part are large, handsome, richly coloured, fragrant, and

abundantly produced. This is especially characteristic of La France; it is even more expressive of Caroline Testout, surely one of the most prolific varieties in existence, which by reason of its impressiveness—I can use no better term—should be included in every collection. A friend of mine who recently introduced it into Oregon, U.S.A., on my recommendation, tells me that he has been greatly impressed, alike by its marvellous growth and the dimensions of its blooms. I cannot but regard it as one of the greatest acquisitions of any kind we have hitherto received. It has, however, two very formidable rivals—Margaret Dickson and Gloire Lyonnaise. These are also magnificent Roses, whose value as autumn bloomers can hardly be over-estimated. Madame Pernet Ducher and Gustave Regis, though somewhat defective in central petals, are exquisite in bud, or even when half-blown. Viscountess Folkestone, which has a very charming salmon-pink colour, is also very productive in September and October, unless when grown in a shady situation. I have attempted to cultivate this highly-perfumed variety in such a position, for the sake of making its somewhat transitory flowers more enduring; but without success. Where, on the other hand, it has been planted in an open and sunny situation, it flowers luxuriantly; but its floral treasures are almost as evanescent as those of Bardon Job, whose velvety-crimson petals are so extremely attractive as to make its cultivator greatly regret that there are not more of these.

Few of the varieties accomplish anything worthy of consideration at this period of the year; the Teas, on the other hand, are, for the most part, splendid autumnal Roses, among the most conspicuous being Marie Van Houtte, Madame Hoste, Medea, Hon. Edith Gifford, Bouquet d'Or, Papa Gontier, Princess Vera, Madame Elie Lambert, Catherine Mermet, Souvenir d'un Ami, and its beautiful derivative, Souvenir de S. A. Prince. He who adequately cultivates these will not lack Roses during the autumn months. *David R. Williamson.*

ROSES AT FRANKFURT.

"Rosen, Rosen—überall Rosen," is the motto which occurs on an early page of the official catalogue of the great Rose exhibition, held at Frankfurt during the past summer. A vast garden was planted picturesquely with some 1600 sorts belonging to various groups. The catalogue contains the names of these several kinds, with other particulars relating to them. The whole is so well arranged that the booklet will form a useful permanent addition to the library of the rosarian. It may be had for a few pence (pfenniges) from Herr C. P. Strassheim, the Bureau der Rosen Ausstellung, Sachsenhausen, Frankfurt-a-M.

CULTURAL MEMORANDA.

EXACUM MACRANTHUM.

THIS pretty blue-flowering warm-house annual from Ceylon is seen very rarely in gardens, though most people appear to appreciate its beauty when they do see it. The bright yellow of the stamens, the blue of the petals, and the plant's dark green foliage, afford contrasts in colour which are most pleasing. A good plant in a 6-inch pot is capable of producing 200 to 300 blooms. The cultivation, though generally considered difficult, offers little difficulty when properly understood. Obtain some good strong cuttings, 3 inches in length, during October, or even in November; insert these cuttings round the sides of 2½-inch pots, putting about five or six cuttings in each pot. Use a compost of two parts fine loam, one part leaf-soil, and one part fine silver-sand; cover the compost in each pot with a layer of sand, so that when the dibber is inserted, the sand will trickle down the base of the hole in which the cutting will be inserted. Put the pots in the propagating-case, and keep the atmosphere moist, when nine out of ten will probably strike. When the cuttings have become well rooted, pot them singly into 3-inch pots, using a compost a little rougher

than that in which the cuttings were struck. Place the plants on a shelf near the roof-glass in a house of intermediate temperature, where they should remain until February or early in March; they may then be given their final shift into 6-inch pots. At this stage, use a compost consisting of good fibrous loam, which should be broken up into pieces about the size of walnuts, one part good Oak-leaf soil, and one part coarse silver-sand, with a sprinkling of soot, and a little chemical manure. Syringe the plants frequently through the growing season, and on no account allow red-spider or thrips to obtain a footing on the plants, or they will completely spoil the flowers.

In April, when the plants have become well established, they may be placed into a little cooler temperature, but close to the glass, and in a position free from draught or chill. At this stage they require a slight shading during the hottest part of the day, and twice a week a little stimulant may be given them. I have used liquid-manure from the cow-sheds and soot-water in a clear state with great advantage. Should the plants not break naturally when about 5 inches high, remove the tips, and repeat this as soon as the shoots are again 4 inches in length. They will require pinching three times to make nice bushy plants. In June, when the flowers commence to expand, take the plants into the greenhouse or conservatory, where they will keep up a succession of bloom for fully three months. Should thrips be troublesome, fumigate once a week with the XL-All vaporiser. Nice plants may be had for furnishing flowers the last three months of the year by striking cuttings in early spring. I much prefer winter-struck cuttings, but those struck during spring are very acceptable, as they bloom when small decorative plants are scarce. Plants in flower during summer should be shaded. H. H.

THE AMERICAN BLACKBERRY AND DEWBERRY.

RUBUS.—Of this extensive genus no fewer than twenty-five or more species are indigenous in the United States of America, where they are called by the various names of Raspberry, Blackberry, Dewberry, Cloudberry. Most of them are shrubby or suffruticose briers, with astringent roots and edible berries. Some have annual stems, without prickles. The only officinal species are *Rubus canadensis* and *R. villosus*, which are closely alike.

R. canadensis, Gray.—The Dewberry, sometimes also called Low Blackberry, or Creeping Berry, has a slender, somewhat prickly stem, which runs along the ground, and occasionally puts forth roots. The leaves are composed of three or five leaflets, which are ovate or ovate-lanceolate, generally pointed sharply, serrate, thin, and nearly smooth. The flowers are large, white, and arranged in racemes, with leaf-like bracts. The plant grows abundantly in old fields and neglected grounds in the Northern, Middle, and Southern States—in fact, it is found in almost all parts of the United States, and its cultivation extends all over America also.

Rubus villosus, or the Tall Blackberry.—The stem of the Blackberry is somewhat shrubby, from 3 to 7 feet high, branching, more or less furrowed and angular, and armed with strong prickles. The smaller branches and young shoots are herbaceous; the leaves are ternate or quinate; the leaflets ovate, acuminate, unequally and sharply serrate, and pubescent on both sides; the foot-stalk and mid-rib usually armed with short recurved prickles. The fruit is first green, then red, and when perfectly ripe is of a shining black colour, and of a most pleasant taste. It is a compound berry, consisting of numerous pulpy one-seeded drupes attached to the receptacle. The flowers are large, white, and in erect racemes, with a hairy, prickly stalk. The calyx is short, with acuminate segments. This species of *Rubus* is perhaps the most abundant of those indigenous of the United States of America. It is found growing in old neglected fields, along fences, on the borders of woods, in forest glades, and wherever tillage or too much shade and moisture

do not interfere with it. Its flowers appear from April to July, according to the climate, and its fruit is ripe in June to August, according to the climate. There are many cultivated and improved varieties or plants of this species. There has been a great improvement made by taking the wild plants and cultivating, crossing, and selecting the plants, until the American cultivated varieties are very numerous, and go by many different names designating the different berries.

The following are improved varieties, Dallas Blackberry, Kittatinny, Spaulding, Ohmer, Eldorado, Child's Ever-bearing Tree Blackberry, Sugar Plum (a new berry of recent introduction), Ancient Briton, Agawam, Erie, Lawton, Early Harvest, Minnewaski, Snyder, Taylor, Wilson, and Wilson Junior.

Dewberries.—In common speech, the word Dewberry is applied to any trailing species. There are several distinct types of trailing Blackberries, only three of which we need to concern ourselves with at present. It looks as if the Dewberries could be distinguished from the true, or bush, or tall Blackberries by their trailing habit, but there are some forms of wild Blackberries which are low and decumbent. There appears to be no true trailing form of the bush or common Blackberry. The best distinction between the Dewberries and the tall bush Blackberries lies in the inflorescence, or flower cluster. In Dewberries the flower clusters are cymose, the centre flower opening first, and the flowers are few and scattered. In Blackberries, on the other hand, the clusters are essentially corymbose or racemose, the lower or outer flowers generally opening first, and the flowers are usually borne in rather dense clusters. The Dewberries are also distinguished by propagating from "tips," while the Blackberries propagate by suckers.

The three most common species of Dewberries of the United States of America are *Rubus canadensis*, *Rubus hispidus*, and *Rubus trivialis*. The first two are northern species, and grow in the northern parts of the United States of America.

R. trivialis is known to be a southern species of the United States of America. *R. hispidus* is a very slender plant, rarely rising at all above the surface of the ground, and growing both in swamps and upon barren sand. The leaflets are obovate, stiff, and shining above; the flowers are few and very small; the fruit small and usually red. The species appears to possess no value as a fruit, and yet it is often confounded with *R. canadensis*, which is the parent of some of our cultivated varieties. *R. canadensis*, to which the term Dewberry is usually restricted in the North, is much like the Southern Dewberry, *R. trivialis*, in appearance. The chief distinguishing points are these: *R. canadensis*, or Northern Dewberry, main stems or canes rather sparsely and slightly prickly; leaves thin and deciduous, rather destitute of prickles, or bearing only weak ones, and more or less hairy; leaflets ovate; sepals often prolonged and leaf-like, sometimes lobed.

R. trivialis, or Southern Dewberry.—Main canes mostly thickly beset with stout prickles; leaves firm, and nearly or quite evergreen, smooth, or very nearly so, the petioles or midribs usually bearing stout prickles; leaflets oval-oblong, or almost lanceolate, and small; sepals not prolonged nor cut. This species is common from Delaware to Florida and Texas, on the sandy lands. The canes often grow 10 or 15 feet high. It is variable, and attractive varieties are often found; some forms have even been mentioned as possessing value as ornamental plants. The Lucretia, subtype variety (*roribaccus*), as compared with *R. canadensis* proper, is a much larger and stronger grower, leaves large, and the margins doubly serrate with small teeth, and more or less notched or jagged, leaflets broad at or below the middle, sometimes triangular-ovate; peduncles or flower-stems much longer, straighter, and stouter, more erect, habitually more numerous and more conspicuously over-topping the leaves; flowers very large and showy, often 2 inches across; sepals uniformly larger, some lobed, sometimes becoming an inch long and wide; fruit much longer and larger as a rule, and more or less thimble-shaped.

Strong forms of *R. canadensis* itself often look much like this in foliage, but I have never seen any in which there was such a development of long flower-stems, large flowers and fruits, and large sepals. This species was founded by Linnæus. It seems that Linnæus apparently founded the species upon two distinct plants, one of which is the form of Dewberry under consideration, and the other being a bush Blackberry. Linnæus' description applies to a trailing plant, and must therefore be taken as the type of *R. canadensis*, and in this sense I think it is understood by our American botanists.

The Bartel sub-type, or var. invisus.—This form of *R. canadensis* is particularly distinguished by the large and nearly simple teeth of the leaves, canes stout and stiff, often partially ascending; leaflets much larger than in the species, broad and thin, smooth, or very nearly so; the teeth usually very large, simple, and often rounded, and terminating in a minute point; peduncles or flower-stems long and straight; young flower-buds commonly bearing a prominent tip, formed by the connivent ends of the sepals, flowers larger than in the species.

Wild Dewberries are common on poor sandy lands throughout the territory east of the Mississippi, at least it is well known that they are variable in appearance and in the character of the fruit. Many fine varieties are found and cultivated, large, fine-fruited, and very productive varieties. In many parts of the United States Dewberries are thought to be better than Blackberries.

The following are some of the old varieties and the names of the State from which they were introduced, also the scientific name, Windorn (*Rubus canadensis*), of Minnesota; Lucretia's Sister (*Rubus canadensis*), of Ohio; Geer (*Rubus canadensis*), of Michigan; Lucretia (*Rubus canadensis*, var. *roribaccus*), of West Virginia; Bartel (*Rubus canadensis*, var. *invisus*), of Illinois; General Grant (*Rubus canadensis*, var. *invisus*), of New York; Never Fail (*Rubus canadensis*, var. *invisus*), of Ohio; Fairfax (*Rubus trivialis*), of Virginia; Matabele (*Rubus trivialis*), of Florida; Bauer (*Rubus trivialis*), of Arkansas; Wilson's White (*Rubus trivialis*), of Texas. Texas has furnished many of the Dewberries, and is still producing some of the finest varieties of improved kinds. The Austin Improved Dewberry (*Rubus trivialis*), a noted Texas variety. It originated at Pilot-Point, in the county of Denton, the State of Texas, by J. W. Austin, of that place, some years ago. It is said to be one of the finest in cultivation. There are many other varieties. There are various methods of cultivating them; but the plants are generally set at about the same distance as Blackberries—3 by 7 or 4 by 7 feet—and the canes are allowed to lie upon the ground, being headed-in when they reach about 3 feet in length. A mulch of straw beneath the canes keeps the berries clean, and renders picking much pleasanter. A wire trellis like the one used for Grapes may be used also. They should be kept cut back, so as to make fruit, and from four to six runners to the plant; ploughed, and kept perfectly clean, if you have to use the hoe. Wm. L. Moore, Pilot-Point, Texas.

FLORISTS' FLOWERS.

CACTUS DAHLIAS.

THE admirable illustration given at p. 239 of that undoubtedly quaint *Dahlia Fantasy* may help to educate those persons in remoter districts who are sometimes called upon to judge Cactus varieties, but are ignorant of the properties of the section. But *Fantasy* is, after all, but one of several distinctive forms, and there is more to be learned respecting Cactus character than that one variety evidences. We see in the crab's-claw form of the narrow-pointed petals, distinctive as well as novel development. Such charming forms as *Arachne*, *Lucius*, *Antelope*, and *J. F. Hudson*, quite a magenta-coloured *Fantasy*, serve to indicate that this section is a growing one. The character of the flowers may be termed incurved, as the petals seem to contract towards the centre. Some day, perhaps, we shall hear of the *Fantasy*

section quoted as evidence of the imitative power of flowers to assume the form of the crab, or spider, or even the tentacled octopus. It must not be forgotten, however, that the originator of Fantasy is Mr. Burrell, of Cambridge, who is in the van in Cactus Dahlia raising. Beyond what were so recently honoured by the Floral Committee, as many more probably have received awards elsewhere, and it may be no matter for surprise if fully a score new ones, all really good, be put into commerce next spring. Thus the new dark maroon Manfi will displace Matchless and Night, as the pretty Island Queen has excelled the lovely but flat-petalled Delicata and the darker-hued Beatrice. Mr. Stredwick's remarkably fine Magnificent should excel Britannia, and Mr. Burrell's Lucius and Antelope, others of similar hues of colour. Charles Woodbridge, one of the very best in commerce, rich crimson, is a typical flower of a section, the converse of that represented by Fantasy, for its petals stand out from the centre quite horizontally, are perfectly straight, twisted, and finely pointed. Its best light-coloured companions are Magnificent, and the beautiful Starfish runs it hard for form. Some day, perhaps, the straight-petalled and the incurved-petalled Cactus Dahlias may have to be put into diverse classes. A very fine dozen of varieties in commerce are Arachne, petals white, edged with crimson; Britannia, pale salmon, lilac shaded; Charles Woodbridge, bright crimson; Daffodil, pale yellow; E. J. Deal, rich scarlet; Harmony, reddish-bronze or deep apricot shade; Island Queen, lilac-mauve; Mary Service, rosy-heliotrope; Keynes' White, so far the best white; Night, the best deep maroon; Starfish, pure orange-scarlet, and Tillie, salmon, shaded rosy-mauve. A. D.

NURSERY NOTES.

GEO. BUNYARD & CO.

WE usually speak of Kent as being a county particularly favourable for the cultivation of hardy fruits, and never were we more convinced of the fact than on the occasion of a recent visit. But Kent has not been exempt from the effects of the exceptional drought any more than other counties. Indeed, her condition has been even worse than some. It does not need so long a journey as that from London to Maidstone to help one to this conclusion. Long before Maidstone is reached, the withered brown appearance of the fields, the dry, almost flagging look upon the trees and shrubs, have convinced you. The only occasional glimpse of green the country afforded on September 9 was that of the plantations of trees; other than this, there was brown and white, scarce anything but brown and white, the brown of the burnt grass, and the white of the chalk. But in the Allington Nurseries of Messrs. G. Bunyard & Co. the visitor fails to find such eye-wearying evidences of suffering vegetation. "But," says the reader, "nor should we expect to do so." The nursery is a highly cultivated piece of ground, and, should necessity arise, the plants and trees are given "root-waterings." If this were correct, the explanation would be a very simple and natural one; but it is otherwise. The extent of the nursery renders such treatment impossible; there is not the water to give them, to say nothing of the amount of labour necessary to apply it over so large an area.

THE EXPLANATION.

It is not this at all, but the disparity of condition between the Allington fruit-tree nursery, and many a fruit and Hop-garden not far distant, is to be explained in large measure by the superior methods of tilling the soil. We say in large measure, because a good-hearted soil has much to do with the degree in which the trees will withstand drought, and it is proof that the Allington Nurseries are well looked after in this respect.

We have previously had occasion to refer to Messrs. Bunyard's excellent means of fighting drought, but never has there been a more striking illustration of its value than in the present year. By the frequent

use of the valuable little cultivator, many times described in these pages, Messrs. Bunyard maintain over the whole surface of the ground a thick "crumb" of soil that is a natural mulch; a sort of non-conductive covering, that prevents, to an astonishing degree, the evaporation into the atmosphere of what moisture the ground already possessed, and promotes capillary flow from below upwards.

We have dwelt upon this feature of the nursery, because at the end of such a season as the present one has been, it is a proper moment to reiterate the value of conserving moisture that cannot be replaced. Another point is this—this natural mulch does not prevent aëration. It does not stifle the land, and keep from it the needed sunlight and air, as do heavy mulches of half-rotted manure; though during such a summer as 1898 this is not of great importance. Having written so much upon the extraordinary degree to which the trees upon the whole have withstood the trying season, a few words should follow as to the individual appearance of the different kinds of fruit trees.

The Pears and Cherries have fared less well than the other sorts. From the many specimens of the Pear slug-worm our correspondents have sent to this office during the season, it is clear that the pest has been unusually prevalent, and Messrs. Bunyard have found it to be their worst enemy. It eats away the upper surface and soft substance of the leaves, and renders those so attacked of little or no value to the tree. They attack Cherry-trees in a lesser degree, but the slug-worm finally develops into what is known as the Cherry saw-fly. The best means to kill the slug-worm is to dust over it some lime or other caustic powder. The operation should be repeated after a very short interval, and before the slugs have forgotten the first dressing. Messrs. Bunyard's excellent manager, Mr. Buss, however, says that he has found one dressing of lime sufficient to kill them; and that he thinks the best remedy that might be made available for them is Hellebore-powder, but it requires to be reduced to a finer degree than at present.

Apples are looking capital. The growths may be less in length than in a more genial growing season, but they are very healthy, the leaves firm and leathery, and the growths are ripened almost as they proceed. It is astonishing to stand for a moment and look along the lines of some of these Apple-tree maidens; the growths are as regular as if brought to a line and topped at a certain height. This is said to be the case more frequently after grafting than budding. Peaches, trained trees, have made fine growth, and they will probably finish better this season even than usual.

FRUITING-TREES IN TRIAL-GROUND.

Every reader of this Journal has probably read at one time or another a description of the Allington Nurseries, and a circumstantial account of the trial-ground, an area planted with fruiting-trees of 200 or so, new, or standard varieties, most in fact of those considered worthy to be catalogued. We do not intend to write such a description now, but to give a few of the more interesting facts concerning the condition of the trees this season. Neither will we make use of a quantity of notes at our hand (taken under an umbrella during tropical sunshine) upon really standard varieties of Apples and Pears, that we happened to observe carrying a full crop of fruit. All such varieties may be found on reference to Messrs. Bunyard's catalogue, where they are described with greater precision and detail than our space or time will permit. But there are several of the newer Apples, and of older but not sufficiently well-known varieties that it may be useful to mention in a note such as this.

In the first place, it may be stated that there was no lack of fruit in the trial-ground for inspection or comparison. The weight of fruit produced by these trees this season is estimated as being considerably above the average, but the size and colour of the fruits have suffered a little. Further, whilst a few of the standard bearers have failed, many out-of-the-way sorts, shy fruiters, and others have a full crop. Messrs.

Bunyard have for several seasons recommended Golden Spire Apple to planters (see fig. 70, p. 253), and during the same period we have enjoyed facilities for seeing the trees most seasons in the nursery. It succeeds admirably in the Maidstone district and is there a splendid and reliable cropper—little cordons, trees with nine fine fruits upon them, large trees, with crops proportionate. In Allington Pippin Messrs. Bunyard have an excellent dessert Apple, that was certificated by the Royal Horticultural Society under the name of South Lincoln Beauty. When the stock was acquired by the Maidstone firm, the name was changed to that it now bears. It is said to be a cross between King and Cox's Orange Pippin; the fruits are of slightly conical shape, of medium size, with deep-set eye, and slender stalk. It has fine flavour, and crops splendidly at Maidstone, and it is claimed for the variety that it will succeed in many places where Cox's Orange fails. On the Paradise stock it fruits extremely early, almost in the manner of another excellent Apple, Bismarck, is known to do so (see fig. 73, p. 257). James Grieve, an Apple given an Award of Merit last October by the Royal Horticultural Society, is another of the Cox's Orange type, and is sometimes described as an Early Cox's, being ready for use in ordinary seasons at the end of September. It is of Scotch origin, and is said to be hardier than the splendid fruit it resembles. A very different type of Apple is James Welch, described as a cross between Lord Suffield and Ecklinville Seedling; it produces fine kitchen fruits of the type of Lord Suffield, but in growth is freer and less subject to mildew and canker, in fact resembling in growth that of Ecklinville. We mention Seaton House because it is such an invariable cropper, and although fit for use in September, may be kept in condition until May. Belle de Pontoise was bearing a capital crop, and is excellent for kitchen or table use. The new Apple, Mrs. Phillimore, and several others, were seen; they will be heard of at a future time. One of the best late kitchen Apples had almost escaped remark: Chelmsford Wonder, new in 1891, and a First-class Certificate variety of the R.H.S. (see fig. 72, p. 257), is not only a good bearer, but it keeps well, and is one of the varieties exhibited from these nurseries so well at the Temple Show.

A new Filbert-nut, known as Early Prolific, was ready for the table. Ordinary varieties would be a fortnight or three weeks first. It is exceedingly prolific, and the husks are prettily frilled.

ORCHARD-HOUSE TREES.

We have never seen a finer-fruited lot of orchard-house trees at Maidstone than there are this season. About 150 Apple-trees in pots were protected from birds, &c., by a kind of 1-inch mesh wire archway. The framework consists of iron pillars that spring from the ground and extend half-way across the roof, where they are rivetted to others from the other side. There is a doorway that can be locked, and is high enough to enter without inconvenience. On the day described, the sides were partially covered with garden-mats—no doubt, to keep a part of the strong sun from them. The trees were capital, extremely healthy in appearance, and most of them heavily cropped, especially such varieties as Twenty Ounce, Emperor Alexander, Worcester Pearmain, King of Tomkin's County, Mother, Gascoigne's Scarlet Seedling, The Queen, &c. Newton Wonder is a variety that succeeds less well than many under this sort of treatment. The trees had then been removed from the house three weeks. The Pear, Peach, and other orchard-house trees were likewise good. A houseful of fine young Fig-trees in pots should be mentioned, because it contained choice varieties like Bourjassotte Grise (fig. 69, p. 251), which though known for more than thirty years, is seldom seen in gardens; it has capital flavour. Also Pingo de Mel, Col de Signora Blanca, &c., that should oftener be seen in gardens, not in place of, but companions to, Brown Turkey.

A NEW REMEDY FOR AN OLD COMPLAINT.

Even more than usual has the American blight infested Apple-trees this season. Hot weather is favourable to it, and we have had several hot

summers. Messrs. Bunyard drew our attention to a cure for this troublesome pest, in which they are just now considerably interested. Procured for another purpose altogether, we believe, this article was used upon Apple-trees infested by the bug, and with such results that it has been determined to offer it as an article of commerce. We were shown old cankered trees that had been dressed with it, and they appeared to quite bear out what our guide described. It had killed the bug, and apparently the fungus in the canker also—for the old dead bark was falling away, and the wounds healing over. Our experience with it is quite insufficient to warrant our writing it up as one of the best washes for the purpose, but Messrs. Bunyard's experienced foremen are firmly convinced of its merits. We hope it may be all that is claimed for it, and more. When it has become distributed we shall doubtless hear from fruit cultivators how far it is effective, and whether it is convenient of application.

duced freely; and if the seed-pods are removed as soon as they are formed, the plants continue to flower throughout the summer. The seeds should be sown in 6-inch pots, and six seeds may be put into each pot. The plants will flower in the same pots. This annual is a native of Jamaica.

PHYLLOCACTUS HOOKERI.

I have a large plant of this species growing in a stove-house containing Caladiums, Alocasias, Eucharis, &c. As the house is carefully shaded, and a moist atmosphere is maintained, it is remarkable that the Phyllocactus should thrive so well. The plant is rooted in a compost of loam and brick-rubble, close to hot-water pipes, and makes broad, clean growths, from 2 to 3 feet long, which flower profusely. It has two flowering seasons (May - June and in September), and produces about thirty flowers each season. The flowers are pure white, and measure 5 inches across, with a stem-like tube 6 inches long. It is one of the

formed leaves, some of these being more or less cordate at the base, some abruptly abbreviated, others regularly and broadly egg-shaped, with an extended apex; whilst in others the leaves had short, toothed, or blunt lobes. The leaves on their underside show in the nerve angles, the glands of *C. ovata*, but they certainly resemble those of *C. bignonioides* in the much lesser degree of hairiness, in which species the hairs are longer than in the case of *C. ovata*.

The form and colouring of the flowers do not essentially differ from the last named; whilst the flowers in reference to size are similar to those of *C. bignonioides*. As this hybrid variety coming from the Japanese *C. ovata* possesses greater hardiness, it is possibly better suited to rough, cold climates than the more tender *C. bignonioides*, a native of the southern United States which is apt to be injured by great cold, and seldom unfolds its blossoms in such climates.

ROUND MAIDSTONE.

(Continued from p. 232.)

BARHAM COURT.—From notes of this interesting place that have appeared in these pages from time to time, many of our readers are probably aware that Barham Court is about 3 miles out of Maidstone, and but one from Watlingbury Station on the South-eastern Railway. We did not approach it from Maidstone, however, but from Linton Park, and to Mr. McKenzie's courtesy we are indebted for a drive from the latter place through Coxheath village and West Farleigh to Watlingbury. Once inside this very extraordinary fruit garden, it was difficult to understand that the present season's fruit crops are below average. The evidence at Barham Court was distinctly opposite, and here is a curious circumstance. In the district generally the crops are light enough, to be sure; the large market growers have crops much below average. Roger Leigh, Esq., who owns Barham Court, does not reside there, and the yield of fruit above the needs of the absent owner is sold. "Never," said Mr. Geo. Woodward, "have I sold a greater weight of fruit than this season," proving the crops to have been unusually good.

Were it convenient, an inspection of the Barham Court fruit garden would, doubtless, be most agreeable and interesting to many who have read of Mr. Woodward's success in exhibiting hardy fruits in London. It is generally known that the interest of the garden lies principally in its fruit trees, but probably only those who have visited it have a correct idea of the importance of this feature. It is not a vegetable garden with fruit trees around the brakes and upon the walls merely, but the brakes themselves are in most cases exclusively appropriated by fruit trees. The majority of the trees were planted by Mr. Haycock in the early seventies, but some were there previous to that date, and, of course, many have since been planted by Mr. Woodward. In Mr. Haycock's days it was intended evidently to maintain the garden with strict regard to neatness and a certain amount of trimness, and the fruit trees were trained in great measure in the French styles. Upright, horizontal, and oblique cordons, espaliers, and such-like trees, that are capable of producing extra-fine fruits, rather than heavy crops, and that necessitate a large amount of attention to pinching, pruning, &c., were the types of the trees. But other times, different methods, and for several reasons (prominent amongst which is a desire to maintain the gardens with as little labour as is necessary, and at the same time to increase the yield of fruits) Mr. Woodward has adopted a very different policy. The result is singular. Trees that were originally cordons have been permitted to grow quite out, and have even produced bush-shaped specimens. Here is one of the noteworthy characteristics of Mr. Woodward's management of the garden. His sole aim is to produce the maximum amount of fruit possible, subject only to the quality being of the highest class. Rather than restrict the growth of the trees that they may become shapely, well-balanced specimens, he permits them in large measure to grow as they may. If a fine growth be produced from a certain side of a tree, and that growth develops more

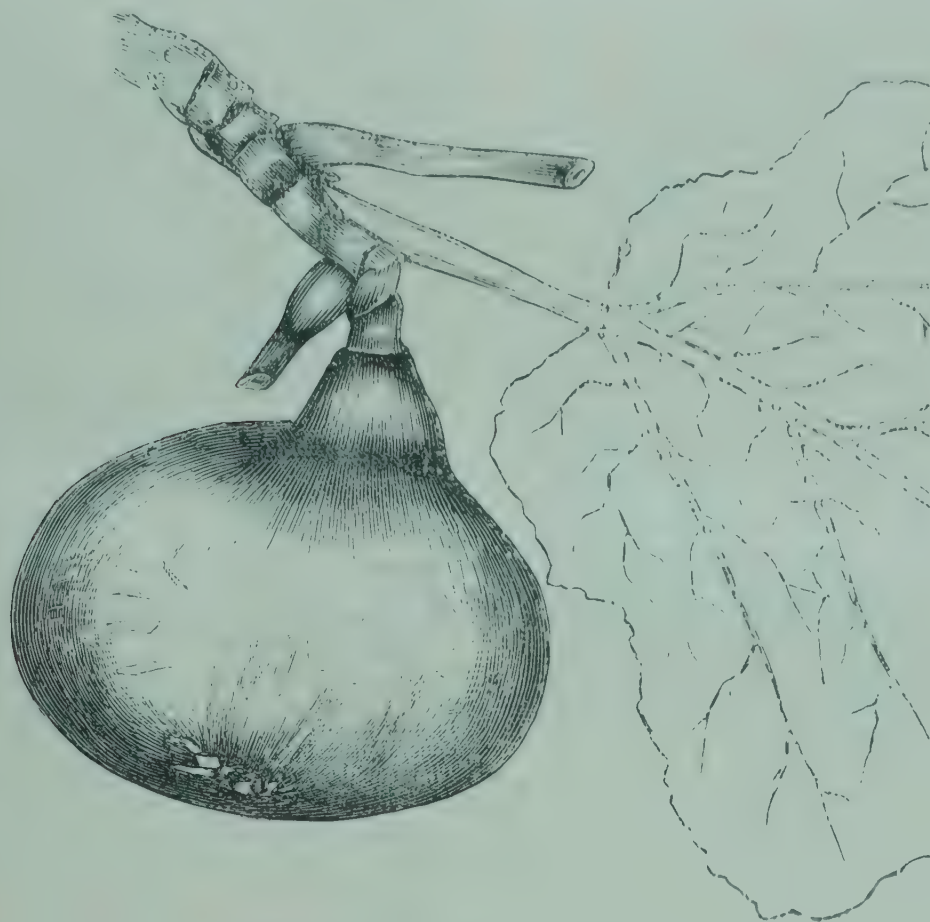


FIG. 69.—FIG BOURJASSOTTE GRISE. (SEE P. 250.)

RASPBERRIES AND STRAWBERRIES.

We did not go to the farm at Chiltern, where the Raspberries and Strawberries are grown, and various plants for seeding are cultivated; but Mr. Bunyard informed us that there he has 100,000 Superlative Raspberries, and six acres of Strawberries. Nor did we visit the home nursery, where a large number of houses are utilised chiefly in connection with the florist and local trade. The Allington Nurseries are to be still further increased by the addition of about 18 acres of land now being prepared for fruit-trees.

PLANT NOTES.

IPOMŒA QUAMOCLIT.

GROWN as a pot-plant on a small balloon trellis, this pretty climber is very effective. It bears erect, axillary, ruby-red, star-shaped flowers, about half an inch across. These are thrown into relief by the finely-pinnate, light green foliage. The plant is of very slender growth, and requires a house with an intermediate temperature, and light shade. The flowers last only for a single day, but they are pro-

night-flowering species, beginning to unfold about 7 P.M., collapsing at daybreak next morning. It would be found especially valuable as a cut flower for dinner-table decoration. Geo. B. Mullett.

CONTINENTAL NOVELTIES.

CATALPA HYBRIDA, HORT.

UNDER the above name, Mr. L. Späth, nurseryman, Rixdorf, Berlin, describes in the *Gartenflora* of September 15 last, a hybrid which flowered in his arboretum in 1897. The illustration of a leaf and flower-spike accompanying his descriptive note, shows a handsome loose spike of flowers, white as regards the ground, which is densely sprinkled over with crimson spots. From all appearances it would seem to be a cross between *C. ovata* of G. Don (Kämpferi, S. et Z.), and *C. bignonioides*, Walt. (syringifolia, Sims.), but which resembles most the first-named species.

The bush which flowered about 12 feet in height, with somewhat erect growing branches, showed the brownish twigs of *C. ovata*, with very irregularly

rapidly than the remaining part, it may do so. One matter only will receive Mr. Woodward's attention. It will be properly supported. It may be by a stout stake, or possibly by a wire stretched from a point to the nearest wall. Thus, over the entire garden are instances in the Apple and Pear trees where growths have taken quite unexpected courses, and Mr. Woodward has followed them with all the attention of an enthusiastic fruit-grower. The espalier-trees will be replaced by degrees with bushes. It may be pointed out here that Mr. Woodward's exhibition fruit is not exclusively or mainly produced by very young trees, or by cordons, &c., but by free-growing bushes, and even standards. The position, which has a gentle slope to the south, is not an elevated one, being little over 100 feet above sea-level. The soil is a fairly rich loam, and rests on limestone.

APPLES.

There can be no doubt but the soil and situation is eminently favourable to the cultivation of the Apple, and being so, Mr. Woodward has little trouble in the matter of pruning the trees. Under other climatic and geological circumstances, where the trees are prone to make strong growths rather than to fruit freely, root-pruning is part of the year's work. Mr. Woodward seldom, if ever, attempts such work. This fact of suitability of soil and climate, together with a knowledge of Mr. Woodward, of his enthusiasm for fruit-cultivation, and his skill in its practice, is quite sufficient to explain the production of such Apples, Peaches, Pears, &c., as he has frequently exhibited. As the report of the Palace fruit-show will be in our reader's hands not later than this note, it behoves us to be very careful in the matter of prophesy. Though it might be better to shun so dangerous a practice entirely, we cannot forbear to mention that Mr. Woodward will stage some capital fruits again this season. Whether he will win as many 1st prizes as usual will, of course, depend upon other people's exhibits as well as his own.

We saw some excellent fruits of Emperor Alexander, Cox's Orange Pippin, Golden Spire (whose merits Mr. Woodward is always ready to extol, and an illustration of which we give in fig. 69), the New Allington Pippin, Peasgood's Nonsuch and—but a mere enumeration of the varieties would be tedious. In two respects the fruits may be a little less good than they would have been had the drought been less severe. These points are colour and size—admittedly important ones.

PEARS.

Pears may be seen in abundance at Barham Court, but to our mind they are not so surprising as the Apples. They thrive well, for we remember Mr. Woodward with specimens that weighed 1 lb. 11 ozs. each. But they require more care than the Apples, and the trees are not finer specimens than those in the gardens at Cardiff Castle. Nevertheless, they are grown in large quantity, and the produce is of the highest quality.

PEACHES.

Peaches are no less a feature of the gardens than the Apples, for 12,000 to 14,000 fruits are ripened in a year. In every position and in countless instances, the trees thrive splendidly. Dozen of trees on September 10, when we had the privilege to see them, were studded with perfect fruits, almost or quite ripe. The loveliest of pictures these trees afforded. We have been speaking of the Peach-trees upon the walls out-of-doors; but to a visitor it is exceedingly interesting to inspect the two large span-roofed houses, that are filled with large standard Peach and Nectarine trees. Always appearing in the best of health, these trees bear heavy crops of fine fruits every season. It is claimed that the standard tree furnishes more fruits per area than trellis-trees; that they give less trouble; and that as the fruits at the top of the tree ripen first, each tree furnishes a long succession. The fruits at the base of the tree ripen as fully and as perfectly as those nearer the glass. To us the picture of these standard Peach-trees laden with fruits is one so grateful that it can never be forgotten.

But there is another circumstance anent the Peach-trees. Some time ago, when re-arranging the standard trees, one of them was discarded. Rather than throw it away, however, the tree was planted in the open between the two houses. When we saw it there were something like eight dozen Peaches upon it, all of them ripening perfectly.

Another great crop with Mr. Woodward is that of the Tomatos. The plants are to be seen inside and upon the walls outside. The weight of the fruit produced is wonderful. On the outside walls also were choice Plum-trees and Green Gages just ripening, a rare lot of luscious fruits.

Apart from the fruit, there are 800 Chrysanthemums grown in pots, and well did they appear, beside miscellaneous plants that are generally to be found in a gentleman's garden.

As we thank Mr. Woodward for the courtesy extended to us, and bid him good-bye (and also the "hoppers"), we cannot help wondering how he manages to keep a garden so full of fruit-trees in the condition he does, with the small amount of labour employed in it. P.

THE WEEK'S WORK.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Pruning Standard Trees of Apples and Pears.—As soon as the fruit has been gathered is the best time in the year to effect this operation. Do not allow the trees to remain unpruned from year to year, and thus become so thick with unthinned growths that it will be impossible to obtain good fruits from them. The foliage requires light to elaborate the sap, or the fruits will be small, and of poor flavour. But large trees do not require to have the branches shortened annually; an occasional thinning being all that is required. The foliage is a safe guide in regard to the health and strength of the tree, and if pruning be left until winter it is gone. Moreover the trees are then wet and slippery, and difficult for the men to get about. The work can be done most expeditiously and with greater convenience in the autumn. All of the small wood in the interior of the tree should be cut away first; strong upright shoots springing from the lower branches must also be cut out, and all decaying wood. The remaining branches should be thinned, so that a fair amount of light and air may circulate around their extremities. All shoots that cross and are likely to chafe each other must also be taken away. Large branches, however, should not be cut off if they are sound and healthy, as the wounds so occasioned take a long time to heal over, and the main stem of the tree often decays in consequence. Many orchards have been planted too thickly at first, and the grower has not subsequently had sufficient courage to cut out the supernumerary trees. It is impossible to correct such an error now by pruning, and the only satisfactory plan is to cut away the weakest and least valuable trees entirely. This may cause a deficiency in the crop for a year or two, but in the end the remaining trees by their renewed vigour, and the better quality of their fruit, will more than compensate for this. Standard trees on the free stock should never be less than 30 feet apart each way. Any varieties that are out-of-date and worthless should be noted, so that they be headed down and re-grafted in the spring. If weak or unhealthy, however, they should be grubbed out. Many of the smaller dessert kinds, such as Court of Wick, Braddick's Nonpareil and others, are not worth growing, because larger and better-flavoured varieties may be easily obtained.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Bulbs.—The principal batch of flowering-bulbs for forcing should now be potted-up, and a further quantity may be so treated in November. This will ensure a succession of flowers well into the spring. A compost that will be suitable for most kinds, including Hyacinths, Tulips, Narcissus, Jonquils, Crocus, and Iris (Spanish), should consist of two-thirds fibry-loam, and one-third good rotten manure and leaf-mould, in equal proportions. To this may

be added a liberal quantity of sharp sand. As a quantity of pots in various sizes will be required, they should be prepared beforehand. They should be perfectly clean, and need to be carefully drained, as the bulbs will require a large amount of water when in active growth. Obtain sufficient painted labels, and a site where the pots may be plunged in coal-ashes or cocoa-nut fibre refuse.

Hyacinths.—Remove all small bulbs or offsets from these before potting is done. Fill the pots nearly to the rim with compost, and place the bulbs therein. Press them a little, and leave the apex of the bulb just above the surface of the soil. Make the soil firm after placing the bulb in position. Pots 4 to 5½ inches will be quite large enough for the largest single bulbs. If desired, 7-inch pots may also be used, and three bulbs placed in each. Roman and Italian Hyacinths will not require so much root-room, and if intended for cutting only they may be grown in boxes or pans to economise space. It is a good plan to sprinkle a little sand on the surface of the soil in the pots, and the ashes or covering material may then be readily removed when the plants are required for forcing. Give the newly-potted bulbs a good soaking of water, and allow sufficient time for the soil to drain before plunging the pots. If it is intended to cultivate any of the Hyacinths in glasses, these should be filled with soft water containing in each glass two or three grains of salt, to keep the water clear. Change the water when it has become foul, and in giving a fresh supply use water heated to the temperature of the air in which the bulbs are growing. Place them in a dark cool room or cellar until the bulbs have made a fair amount of roots, when they may be removed to a light position, but not near to a fire, or in an otherwise dry or draughty place. Single-flowering Hyacinths are best for cultivation in glasses.

Tulips may be potted up considerably closer together than Hyacinths, more especially varieties of the Duc Van Tholl section. Most of the early-flowering varieties develop less amount of foliage than those which flower later. If a quantity be grown to provide flowers for cutting, the bulbs may be placed thickly in pans, pots, or boxes, and from such receptacles it is convenient to lift bulbs in flower that may be required for dinner-table decoration, &c. It is most necessary that the roots should be active before the bulbs are removed to the forcing-house.

Narcissus, Jonquils, &c.—The size of the bulb is a good guide as to what number should be placed in each pot. A few of the stronger varieties prove useful when placed singly in small pots, but for general use, 6, 7, and 8-inch pots are chiefly used. The smaller varieties and Jonquils are useful for decorative work if potted into 4, 4½, and 5-inch pots.

Miscellaneous.—Spanish Iris, Crocus, Gladiolus The Bride, Snowdrops, Chionodoxas, &c., may all be treated in a similar manner to the kinds already alluded to.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

French and Runner Beans.—Any French Beans in flower-pots, standing in the open air, should now be given the protection of a Melon or Cucumber-house. French Beans growing on the open border may be protected from frost by covering them at night with mats, or dressed canvas covers. Make another liberal sowing of the variety Syon House or Osborne's Forcing Bean, and place the pots in a temperature of 45° or 50°. Gather a quantity of Runner Beans before they become damaged by frost, and place them on the floor of a cool cellar, where they will remain fit for use for a considerable time. It would pay to protect a portion of this crop by covering it up on nights when the thermometer falls to 32°.

Cauliflowers.—Examine plants of Autumn Giant that are nearly fit for use, and break a few leaves off the plants, placing them over the flower-heads to protect them from frost and sun. Encourage later plants by giving them some liquid manure, so as to get them forward in good time. They may then be removed to a position where frost and moisture cannot damage them. Continue to prick out young plants into handlights, and cool pits and frames, but do not place the lights over them, unless 10° or more of frost is probable.

Vegetable-Marrows and Ridge Cucumbers.—Plants that are maturing a crop will require to be covered at night when frost is likely. Cut any Marrows that

are fit for use, and store them in the vegetable-shed till required for use. All the fruits should be removed from the Cucumbers in the open, unless protection can be given from frost. The larger fruits may be kept fresh by placing the stem and part of the fruit in water. The small fruits may be pickled.

Tomatos in the Open.—Frequently examine these plants, and gather any fruits that are colouring. Place these in a warm-house, where they will fully ripen. In the event of severe frost it will be best to cut the plant at the ground level, and suspend the stems bottom upwards in an airy warm-house, where, if the fruits are full-sized, they will colour, and keep for a long time in good condition.

Forcing-pits and Soils.—It is time that pits should be prepared for forcing Asparagus, Seakale, French Beans, Early Potatos, and Rhubarb. Suitable soils for these crops may also be prepared. It is best to make these preparations beforehand.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Intermediate House.—The rare *Cœlogyne Sandneriana* is now growing rapidly, and should be kept thoroughly moist at the roots. It should be placed at the warmer end of the house, in a light position, but one free from direct sunshine. *C. elata* has already completed its growth, and the flower-spikes will be almost inactive for some considerable time, but the plant will require frequent supplies of water until the flowers commence to open. *C. barbata*, having a very similar habit, requires identical treatment. The flower-spikes of both species are very susceptible of injury, and it is well to select a safe position for the plants. The spikes of the pretty *C. ocellata maxima* are also at a comparative standstill; keep the plant well supplied with water, or the pseudo-bulbs will shrivel. The latter remarks apply also to *C. Micholitzii*, which is now commencing to develop its flower-buds. *C. cristata*, and its several distinct varieties, are fast completing their new pseudo-bulbs, and until these are fully made up, the plants require more water than at any other period of the year. Plants of *Miltonia vexillaria* that have passed the summer with the cool *Odontoglossums*, should now be removed to the coolest end of the intermediate-house. *M. Bleuana* × and *M. Endresii* will require a similar position, and being in full growth should be given every encouragement to produce strong flowering growths. *M. Roezli* and *M. Phalænopsis* are also growing freely in a warm moist corner of this house; plants of both species that have filled their pots with roots will require a thorough watering two or three times a week. The varieties of *M. spectabilis*, *M. Moreliana*, *M. Bluntii*, *M. B. Lubbersiana*, *M. virginialis*, *M. candida grandiflora*, *M. Clowesii*, *M. Russelliana*, the new *M. Binotii*, and *M. leucoglossa*, make a very pleasing show at this season. After the flowers have faded, place the plants in the coolest part of the house, and afford them very little water, so as to give them a short season of rest. *Oncidium ampliatum majus* having commenced to grow again should be removed to a shady position in the warm-house. During the earlier stages of growth the plants need but little water. Such *Lycastes* as *L. aromatica*, *L. Cobbiana*, *L. Rossiana*, *L. fulvescens*, *L. candida*, *L. trifoliata*, *L. Lawrenceana*, *L. plana*, *L. p. Measuresiana*, *L. Skinneri*, and its numerous varieties, are commencing to make new pseudo-bulbs, and will therefore require considerable water and a gradual increase of light. Such of the spring-flowering *Cattleyas* as *C. Trianaei*, *C. Mendeli*, *C. Schroderae*, *C. gigas*, and *Lælia tenebrosa*, as have completed their growths, should be given less water at the root, and exposed to all the sunlight possible, so that the newly-formed bulbs may be properly matured. The principal object should be to induce these plants to make many roots, but not growths. If any of the plants have grown too large for their pots, and are likely to suffer for want of rooting-material, they may be afforded more rooting-space at this season. Care must be taken not to disturb the old roots more than is unavoidable. The operation should be commenced as soon as young roots become visible at the base of the current season's growth. Break the pot and take away as much of it as is possible without interfering with the drainage, then place the whole into a pot of convenient size, filling in around the plant and nearly up to the rim with drainage material, and surface with peat and sphagnum-moss. After repotting afford water very sparingly. The coolest part of this house is the most suitable

place for the distinct *Dendrobium subclausum*. As it is liable to red-spider the plant should be syringed overhead occasionally, and the small leaves carefully wiped over with a soft sponge. In a similar position *Maxillaria Sanderiana* thrives luxuriantly, and should always be allowed to become properly dry before being again watered.

Shading materials.—In addition to the lattice-wood blinds, garden-mats have been used during the past summer for shading the *Odontoglossums*. These mats may now be dispensed with altogether, the extra light through the open blinds will tend largely to strengthen and solidify the young growths. These remarks apply to span-roofed houses which are fully exposed to the sun's rays; lean-to houses facing north will need very little, if any, shading.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of Salisbury, Hatfield House, Herts.

Tomatos for Winter Use.—Plants growing in pots that have already developed a sufficient number of trusses of flowers to produce a crop of fruit, should be stopped to one leaf-joint beyond the last produced

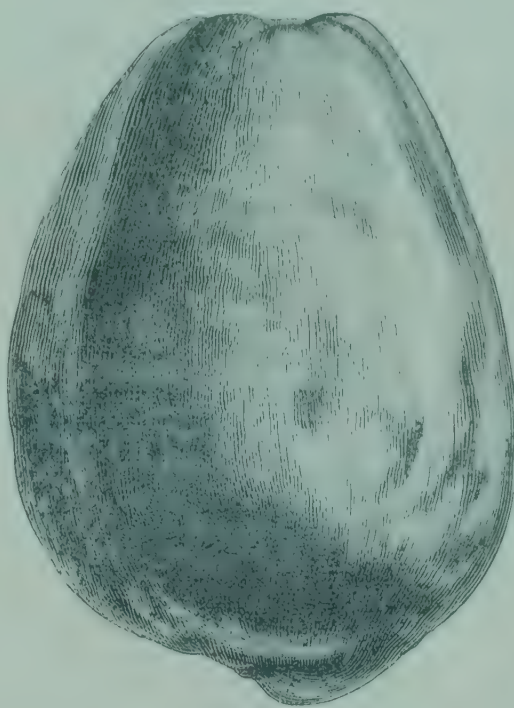


FIG. 70.—APPLE GOLDEN SPIRE: COLOUR GOLDEN-YELLOW.
(Reduced).
(See p. 250, col. c.)

truss of flowers. In the case of Tomato-plants in the border, and that have an unlimited length of trellis to cover, they may be permitted to extend so long as the weather is sufficiently genial. Remove the side-shoots as soon as they are produced, and confine the plants to one stem. In order to assist the setting of the flowers, maintain a freely ventilated, dry atmosphere. The fine weather experienced of late has rendered fire-heat unnecessary; but duller and colder days may now be expected, and heat must be obtained in the hot-water pipes, to maintain the temperature from 55° to 60° by night, and 65° by day, with a rise of 10° to 15° from sun-heat. Do not permit the plants to suffer from drought, nor water them before they need some. Weak manure-water may be given occasionally after the plants have set a crop of fruit. If Tomatos are required to ripen as early next season as April or May, seeds should now be sown. Choose a free-setting variety, and to those growers who have not a favourite variety, I would recommend *Conqueror* for the purpose; it is of medium size and good shape. *Frogmore* selected is also a good one for early forcing. Sow the seeds in a pot or pan, using fine light soil, and cover them about a quarter of an inch deep. Carefully water the newly-sown seeds, and place them near the glass in the house where Tomatos are still in flower. Moisten the soil as often as it shows signs of dryness. When the seedlings have made the first pair of leaves, pot them off singly into 3-inch pots, and when these have become full of roots, re-pot the plants into 5 or 6-inch pots. Keep them con-

stantly near the glass, and plant them into the borders or into fruiting-pots next January.

Grape-vines.—Vines that it is intended to start about the middle of November, in order to furnish ripe Grapes by the middle of May, should now be pruned and dressed. The wood-work and glass must be thoroughly washed with a scrubbing-brush and soft-soapy water. Wash the walls with a lime-wash, containing a quarter of a pint of paraffin-oil to 1 gallon of wash, and leave nothing undone that will help to free the vinery of insect pests. The method should be something like the following: Prune the Vines, and remove the prunings; next wash the house; then let down the Vine-rods, and suspend them from the trellis a convenient height from the border, that they may be easily cleaned and dressed. Remove all loose bark, wash the rods with soap-suds, using 8 oz of soap to a gallon of water. Next paint them with some soap-suds, and YL All Liquid Insecticide added at the rate of one-fifteenth part. By the addition of sulphur, clay, and cow-manure, make it of the consistency of paint, and with this smear the Vines, taking care not to damage the buds, or screw the rods while down. When the dressing has dried, re-tie the rods very loosely to the wires with tar-string. Remove the surface-soil from the border down to the roots, and replace with a top-dressing of loam, lime-rubble, and burned soil, to which may be added a little bone-meal, at the rate of a 6-inch potful of bone-meal to a barrow-load of soil. Keep the vinery as cool as possible until starting-time.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord Gerard, Eastwell Park, Ashford.

Amaryllis Bella Donna.—There are but a few autumn-flowering bulbs that equal this beautiful *Amaryllis*. The bulbs should be planted in a sunny position in light sandy soil, and will rapidly increase there if allowed to remain sufficiently long. During September and October they will furnish a grand display of flowers useful for cutting. The colour of the flowers is white edged with pink, and frequently shaded with purple. The plants give a much better effect if planted in clumps or rows, rather than as isolated specimens.

Crocus and Colchicum.—The autumn-flowering *Crocuses* will succeed in any good garden soil. They are very effective when planted in masses. The corms should be left undisturbed from year to year, and they will considerably increase in number.

Hepaticas should be planted during this month or next. Ordinary garden soil is generally sufficient for them. They may be planted at the fronts of herbaceous borders, or for edgings of beds. The height of the plants is rarely more than 4 inches.

General Remarks.—The time of the year has now arrived when a constant use of the broom will be necessary to maintain the garden in a neat condition. The leaves as they are swept up should be put in some out-of-the-way place to form leaf-mould. Gather up sticks and branches as they fall, and burn them. If weeds or moss be growing upon any of the walks these may be dressed with a weed-killer, which will keep them clean for the rest of the year. In the continued absence of rain, Dahlias will need to be frequently watered—indeed, most autumn-flowering herbaceous plants, including *Michaelmas Daisies*, will require to be given abundant waterings. All creepers against walls should be heavily watered, especially the *Ampelopsis*, which is colouring prematurely, and from which all the beauty of colouring in mass will be lost if not attended to in this respect. Nail up shoots of creepers, and remove long straggling shoots before the autumn storms begin. Continue the pulling or hoeing of weeds in any portion of the garden where they may exist. The autumn-flowering *Chrysanthemums* will need water, and should be supported by neat sticks. Proceed without further delay with the putting in of *Viola* and *Pansy* cuttings. Pay every attention to plants it is intended to put in the flower-beds next month to flower during next spring. Many of the subtropical plants, including *Cannas*, must be lifted from the open ground and potted-up before frost sets in. *Calceolarias* from which cuttings will be required next month should be given water, to encourage growth. Stir the soil around *Violets* in the open border, and if red-spider is still attacking them, syringe the plants with diluted carbolic soap, as advised in a previous Calendar; they will need to be well watered also. Remove annuals as soon as they cease to be ornamental,

APPOINTMENTS FOR OCTOBER.

TUESDAY,	OCT. 4	{ Scottish Horticultural Association, Meeting.
TUESDAY,	OCT. 11	{ Royal Horticultural Society's Committees. National Chrysanthemum Society's Exhibition (3 days).
MONDAY,	OCT. 24	{ National Chrysanthemum Society's Floral and General Committees, Meeting.
TUESDAY,	OCT. 25	{ Royal Horticultural Society's Committees.
MONDAY,	OCT. 31	{ National Chrysanthemum Society's Floral Committees, Meeting.

SALES FOR THE ENSUING WEEK.

MONDAY,	OCT. 3	{ Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	OCT. 4	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Important Sale of 135,000 Gooseberries, at Heath Field Farm, Swanley, by order of Mr. John Wood, by Protheroe & Morris.
WEDNESDAY,	OCT. 5	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Continental Plants, Roman Hyacinths, Liliun Harrisii, &c., at Protheroe & Morris' Rooms. Unreserved Sale of well-rooted Nursery Stock, at the Tunbridge Wells Nurseries, Tunbridge Wells, by order of Messrs. Thos. Cripps & Sons, by Protheroe & Morris (2 days).
THURSDAY,	OCT. 6	{ Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	OCT. 7	{ Dutch Bulbs, and Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—53.7°.

ACTUAL TEMPERATURES:—

LONDON.—September 28 (6 P.M.): Max., 61°; Min., 46°.
PROVINCES.—September 28 (6 P.M.): Max., 58°, Dungeness; Min., 48°, Aberdeen.

As these pages are passing through the press, the Royal Horticultural Society is holding its great fruit show at the Crystal Palace. The show has now become an annual institution, and we may hope that it may long continue to be so. There is no question whatever that, speaking generally, and allowing for certain exceptions, British-grown fruits, like British-grown vegetables, are superior to those produced in other climates. The general public, being badly served in the matter, hardly realises this, and therefore great shows like the present are very useful as object-lessons. If the Society could get together the greengrocers and restaurant-keepers of London, and make them see what fruit and vegetables ought to be, no doubt good results would ensue; and if the cooks, who so generally spoil the best of our vegetables, could also be included in the party, the diffusion of science—that is, of knowledge—would be markedly promoted, and the digestion of the lieges improved. In the meantime, the education of the public must eventually exert its influence on the purveyors and on the cooks.

The Conferences and shows held of late years by the Royal Horticultural Society and other bodies, have unquestionably promoted the increase of fruit-culture, and enhanced the general quality of the product. This is rendered evident by comparing the illustrations given in our columns in former years with those of the same variety as now shown. The Society, too, deserves the thanks of the community for its efforts to diffuse a knowledge of fruit-culture, and for its strenuous endeavour to

facilitate the recognition of the different varieties, as well as to establish a definite nomenclature.

If, now, it could ensure the extinction or banishment of half or two-thirds of the varieties whose names encumber our lists, it would render even greater service. This, we fear, is impossible. Something, however, is being done by proving to demonstration which varieties are best for particular purposes and for particular localities, so that in course of time the comparatively worthless varieties may be eliminated. The importance of careful handling, packing, and judicious "marketing" has been insisted on, and we believe with some success. Fruit growers are beginning to realise that if it is worth while to do a thing at all, it is better worth while to do it well.

The schedule, of which more than three thousand copies have been distributed, is defaced by intrusive advertisements, which should have been relegated to their proper place at the end. It is divided into two divisions, the first applying to fruits grown under glass or otherwise, and exhibited by gardeners or amateurs only. Here the great interest centres in the collections of twelve dishes of ripe dessert fruit, of six kinds at least. Smaller collections of a similar character are to be displayed, besides various classes for Grapes, in which the competition is sure to be keen.

The second division is open to nurserymen only. In this class collections of fruit-bearing trees in pots, as well as of fruits, are asked for, and will certainly be forthcoming.

A third division added at the special request of the market gardeners, comprises classes for Grapes and other fruit grown by market-gardeners, for market purposes. Amateurs or gardeners who merely sell their surplus fruit are not admitted to compete in this division.

Division IV. is devoted to outdoor fruit as grown by gardeners and amateurs.

Division V. is intended for the encouragement of gardeners and amateur growers on a small scale, and not only are prizes offered in these classes for Apples or Pears, but the successful exhibitors will also have their third-class railway fares in one direction paid. This division also includes classes for growers in various counties. Kent has a class all to itself; the other counties being grouped according to their geographical position.

The sixth division contains various classes for representatives of particular varieties of dessert Apples and dessert Pears, and corresponding classes for Apples, &c., used mainly if not entirely for cooking purposes.

We believe there are about one thousand three hundred entries, those for collections being more numerous than heretofore, whilst those for single dishes are fewer. Forty-one judges are appointed, with six referees, in case of differences of opinion. Most of the great fruit-growers are represented, among them being Messrs. McINDOE, WOODWARD, RIVERS, VEITCH, BUNYARD, LAING; and Messrs. SUTTON & SONS show a remarkable collection of Tomatos. For more detailed information we must refer to our report, which will be as full as the time at our disposal will permit.

Horticulture in the Transvaal. AN old correspondent, much given to the ferreting out of statistics relating to horticulture in all parts of the cultivated globe, has found it necessary apparently for his peace of mind to inquire into the present condition of things under Mr. President KRUGER's rule, and his good

and true men in the Transvaal, and so "E.C." (the correspondent in question) writes to us to the following effect: "From friends at the Cape, at Kimberley, and in Johannesburg, I had been having very contradictory, altogether unsatisfactory accounts of horticulture and agriculture in the Transvaal. To get at the truth I determined to go to headquarters in Pretoria, and ask from Mr. President KRUGER how crops were distributed in the Republic—what was the general outcome?—what the prospect? Time passed on, and I became weary, and I wished that I had not troubled the worthy President. But at 9 o'clock to the tick on the evening of Saturday last came the man from St. Martin's-le-Grand, and all the information obtainable by the Government House people in Pretoria. From this communication it appears that my inquiry had been referred to the Agricultural Society of the State, and that body had endeavoured to tabulate statistics founded upon their inquiries, but had not succeeded in doing as the *Gardeners' Chronicle* does with its Fruit Crop statistics year by year; and this was a matter of regret. There was much trouble in getting at what crops were found to be suitable for land at various altitudes. Some succeeded; others failed, or were not quite a success. Fruit suited to the soil paid for growing, and the area of growth was to be extended. Cereals suited to the country had been a success, and the area of cultivation would be extended when circumstances permitted, when results were sufficiently encouraging. The general trend was to extension of area of cultivation, and to an endeavour after higher cultivation. On the whole, we think our correspondent is to be congratulated upon the success of his enquiry—that Mr. President KRUGER, his Secretary, and the Agricultural Association above alluded to, deserve thanks for what has been vouchsafed, and for what in the future we may reckon upon receiving.

HOOKER MEDAL.—The subscribers to the Medal presented to Sir JOSEPH HOOKER, in the name of the Linnean Society, have received a copy in bronze. The likeness is excellent and characteristic, and the production artistic and highly satisfactory. The work was executed by Mr. PINCHES, of the Haymarket.

THE CHINA ASTER.—In the *Botanical Magazine* for last month, Sir JOSEPH HOOKER gives a figure and a description of the wild form of the China Aster. The great variations that occur in this plant are, we may add, all seedling variations, inasmuch as there is but one species, so that crossing is not possible. Again, as the plant is an annual, it produces no winter-buds, and "sporting" does not occur. "The indigenous form," says Sir JOSEPH, "appears to be common in the rocky hills of northern China, from the neighbourhood of Peking to the Yang-tse-Kiang. There are also specimens in the Kew Herbarium from eastern Turkestan, western Tibet, and Afghanistan; but in the more western of these localities, it is no doubt only known as a cultivated plant, as it is in Japan. According to Aiton it was introduced into England by PHILIP MILLER in 1731; and DILLENUS, who received seeds from Prof. VAN ROYEN, of Leyden, figured it in 1732. The specimen here figured flowered in the herbaceous grounds of the Royal Gardens, Kew, in October, 1897, but did not mature seed. It was raised from seeds presented in 1896 by the Messrs. VILMORIN & Co. They were obtained from the Abbé FARGES, who collected them in eastern Szechuan."

PROF. AXEL BLYTT.—We regret to announce the death, in his fifty-fifth year, of the Professor of Botany in the University of Christiania. Dr. BLYTT was well known for his researches in the Norwegian flora. He was a member of the Botanical Congress in London in 1866.



FIG. 71.—VIEW IN THE CATLEYA-HOUSE OF JOSEPH BROOME, ESQ., LLANDUDNO. (SEE P. 256.)

THE FERTILISATION OF PEAR FLOWERS.—

From the *Proceedings of the American Pomological Society* (twenty-fifth session, September, 1897), we take the following résumé of a paper prepared by Mr. M. B. WAITE, dealing with the pollination of Pear flowers, and which has a most important bearing on the question of the fertility or barren condition of certain varieties:—"An orchard of about 22,000 trees of Bartlett Pears (Williams) was planted in Virginia, and although seventeen years old, the trees had never borne a satisfactory crop of fruit, though they blossomed freely year by year. A few trees standing near Pear trees of another variety had borne good crops of fruit, but the Bartletts, on the whole, were unfruitful. The results of Mr. WAITE's investigations brought out the fact that while many kinds of Pear trees are self-fertile, the pollen of each tree fecundating its own flowers, the Bartlett was practically self-sterile, and its flowers must be fecundated by the pollen of some other variety to produce a full crop. The curious fact was also brought out that while the pollen of the Bartlett is impotent for its own flowers, it readily fertilises other kinds. The attention seems to have been directed more to the influence of the cross-pollination than to the potency of the pollen. The nature and properties of the pollen itself would seem to demand attention."

A "CORNER" IN FRUIT.—Whence comes all the fruit now meeting with so ready a sale in London streets, and at so cheap a rate? Every urchin with a halfpenny or a penny to spare can regale himself with wholesome fruit from the Continent, Spain, America, or from English Orchards. There is just now a little "corner" in the Farringdon Road, between the Metropolitan Railway station and the Corporation Fruit and Fish Market, where Covent Garden is represented in miniature. It is a great place for youngsters. Plums sell here at from 1½d. to 4d. per lb., Pears at 1d. to 4d., Apples 1d. to 3d., Oranges at two for 1½d., English Grapes may be had from 8d. per lb., and foreign Grapes from 3d. to 6d. per lb.; Bananas meet a ready sale at 1d. each, or seven for 6d.; fine Damsons are sold from 2d. per lb. If some vegetables are scarce or dear, there is an abundance of wholesome fruit.

NATIONAL CHRYSANTHEMUM SOCIETY.—In view of the devastation among plants of Chrysanthemum, caused by the Chrysanthemum-rust, the executive committee of the National Chrysanthemum Society have arranged for a Conference Meeting to take place on October 11 next, at 6 o'clock in the evening, in the St. Stephen's Hall of the Royal Aquarium, Westminster. A paper will be read by Mr. P. WATERER, setting forth the effects of the rust from the cultivators' point of view; and Mr. GEORGE MASSEE will also read a paper dealing with its scientific aspects, when a discussion will follow. Full particulars will be announced by circular.

HELPING OUR CHARITIES.—We are gratified to learn, that by kind permission of A. MORDAN, Esq., the gardens of Stone House, Reigate, were recently thrown open to the public on behalf of the Gardeners' Royal Benevolent Institution. Mr. STEER, the Head Gardener, has thus been able to forward upwards of £20 in aid of the funds of this charity.

OLD GARDENING BOOKS.—We have more than once referred in these columns to the increasing interest in, and consequently the enhanced value of, old books on gardening. This more especially applies to books having finely-executed coloured plates, and to those issued up to the beginning of the eighteenth century. The *desiderata* list of an eminent London bookseller issued a day or two ago includes a considerable percentage of books relating more or less directly to gardening.

THE SOCIETY OF AMERICAN FLORISTS' proposes to add to its title in future the words "and Ornamental Horticulturists." We may therefore expect in future that the gardeners from the States will be distinguished for their good looks, as well as for their earnestness and ability. It is often difficult to frame a concise and accurate title; the designation

of the Gardeners' Orphan Fund, for instance, might lead to the inference that only the orphans of Royal gardeners were entitled to relief!

"THE JADOO ALBUM" (The Secretary, Jadoo, Limited, Palace Gate, Exeter; and Directeur de l'Usine de Jadoo, Margaux, France), with a Preface by Colonel HALFORD THOMPSON.—The success which has attended the introduction of Jadoo fibre, and the extent to which the employment of it has developed, have warranted the makers and the inventor of it in issuing a volume containing a brief account of the substance, illustrated with various pictures of plants grown with its assistance. To quote from the *Album*, "Jadoo was originally intended to be used merely as a substitute for earth in large towns, where loam was difficult to get—and in some cases unattainable.... The discovery that it had the effect of quickening the germination of seed, of increasing the number of seed that germinated, and above all of making cuttings "strike" with greater certainty and greater rapidity, opened up for it uses in all parts of the world." Continuing, we read that the new factories at Margaux are to supply Jadoo to the Vine-growers, that it is used for tobacco plantations, and also for Orange trees, Tea, Coffee, and other crops in various countries and colonies.

ROMAN HYACINTH.—Messrs. E. H. KRELAGE announce the distribution of a variety with pale mauve-blue flowers, which it is alleged flowers forty-five days earlier than the ordinary varieties.

THE ANATOMICAL METHOD.—M. CRÉPIN, who for forty years has devoted himself to an exhaustive study of the species of Rosa whether living or preserved in herbaria, comments in the last number of the *Bulletin* of the Royal Society of Belgium on the anatomical method of discriminating species. M. Crépin's remarks go to show that until anatomists have the power and the means to make comparative studies of plants grown under varying conditions as systematic botanists do, their researches must lack the completeness and authority attaching to the best morphological work. To suppose that a laboratory student, however diligent and intelligent, can in the course of two years attain to the knowledge of a genus possessed by one who has given a lifetime to its study, is obviously absurd. The anatomical characters are very valuable, but they require to be employed with the same judgment as other characters.

CHIONODOXA LUCILIAE.—Messrs. E. H. KRELAGE & SON, of Haarlem, offer among their novelties a variety with rose-coloured flowers.

AMERICAN TREE SEEDS.—The peculiar circumstances of the case induce us to depart from our usual course of merely announcing the publication of Trade Catalogues. The list of seeds of American trees and shrubs issued by Messrs. THOMAS MEEHAN & SONS, of German Town, Philadelphia, is a document of unusual importance, and both nurserymen and tree-lovers who often experience difficulty in obtaining such seeds will be interested in it.

ELEMENTARY BOTANY.—The Michigan Agricultural College publishes a series of elementary studies of Beans, Peas, and other plants, for the use of beginners. The plan adopted by Mr. BEAL is to provide the requisite materials for the pupils, and then to leave them to observe for themselves the phenomena of germination, &c. Little or no assistance is given till the pupil begins to handle, see, and compare. When this is done, the aid of the teacher is given to facilitate the work, direct it into proper channels, correct errors, and give explanations. The first thing to do is to get the scholar to see properly.

GORDON'S GARDEN AT KHARTOUM is thus described by the special correspondent of the *Daily Mail*, who visited it after the battle of Omdurman:—"Here was an Englishman doing his duty, alone, and at the instant peril of his life; yet still he loved his garden. The garden was a yet more pathetic ruin than the palace. The palace accepted its doom mutely; the

garden strove against it. Untrimmed, unwatered, the Oranges and Citrons still struggled to bear their little hard green knobs, as if they had been full ripe fruit. The Pomegranates put out their vermilion star-flowers, but the fruit was small and woody, and juiceless. The Figs bore better, but they, too, were small and without vigour. Rankly overgrown with dhurra, a Vine still trailed over a low roof its dwarfed leaves and limp tendrils, but yielded not a sign of Grapes. It was all green, and so far vivid and refreshing after Omdurman. But it was the green of nature, not of cultivation; leaves grew large and fruit grew small, and dwindled away. Reluctantly, despairingly, Gordon's garden was dropping back to wilderness."

BEGGAR-WEED (*Desmodium tortuosum*).—This plant has the reputation of being a valuable forage plant for tropical countries. At Saharunpore, to which garden seeds were sent from Kew, the plant is reported to grow well, but the cattle refuse to eat it.

DAVIDSON PLUM.—This name is applied to the fruit of an extraordinary saxifragaceous plant (*Davidsonia pruriens*, F. v. M.). It was introduced to our gardens through Mr. W. BULL, and was figured in our columns on June 30, 1877. The fruit, which is figured by Mr. F. MANSON BAILEY in the *Queensland Agricultural Journal*, is like a Plum of medium size, but covered with fine hairs, readily removed by a cloth. The colour is purple, the flavour acid. It is used by the settlers for the purpose of jam-making and other purposes. No doubt the fruit is capable of improvement at the hands of the gardener. It is almost needless to say it is not a Plum.

"PROCEEDINGS OF THE AMERICAN POMOLOGICAL SOCIETY."—This publication, if no longer brightened by the fluent eloquence of the late MAXSHALL WILDER, at any rate shows that the zeal and energy he infused into the Society are not exhausted with his death, albeit a cell is made for a larger infusion of young blood. The present number contains a record of the transactions of the year 1897, including those of the annual meeting held at Columbus, Ohio.

BOTANICAL EXCHANGE CLUB.—We have before us the reports for 1896 and 1897, that for the latter year edited by Mr. G. CLARIDGE DRUCE. The number of specimens contributed for exchange is above average, and the members enjoy the privilege of having the "critical" species named by an expert. A new British sedge, *Carex chordorhiza*, has been distributed, as well as the doubtful plant known as *C. helvola*.

THE ENDEAVOUR RIVER PEAR.—This is a fruit originally described by Baron VON MUELLER, and now figured in the *Queensland Agricultural Journal* by Mr. F. MANSON BAILEY, the colonial botanist. The fruit is rosy-red, Pear-shaped, flesh white, and delicately flavoured. It is used by the colonists for jam and cooking-purposes. It is hardly requisite to say the popular name is inaccurate—the shrub bearing it is no Pear, but a Myrtaceous plant, *Eugenia eucalyptoides*.

CATTLEYA LABIATA SCHRODERÆ, &c.

We welcome the opportunity afforded by the fine view in the Cattleya-house of Joseph Broome, Esq., Sunny Hill, Llandudno, to call attention to the beauties of the fragrant *Cattleya labiata* Schroderæ, for such is its most fitting title; although, probably from want of sufficient material, it was originally named by Professor Reichenbach *Cattleya Trianaei* Schroderæ, and was described in the *Gardeners' Chronicle*, April 16, 1887, p. 512. In the same issue, at p. 522, is the record of its having been certificated to Baron Schroder at the Royal Horticultural Society on April 12.

As soon as it became more plentifully represented in collections, it became evident that it was as distinct from *C. labiata* Trianaei as *C. l. Mendeli*, *C. l.*

HOME CORRESPONDENCE.

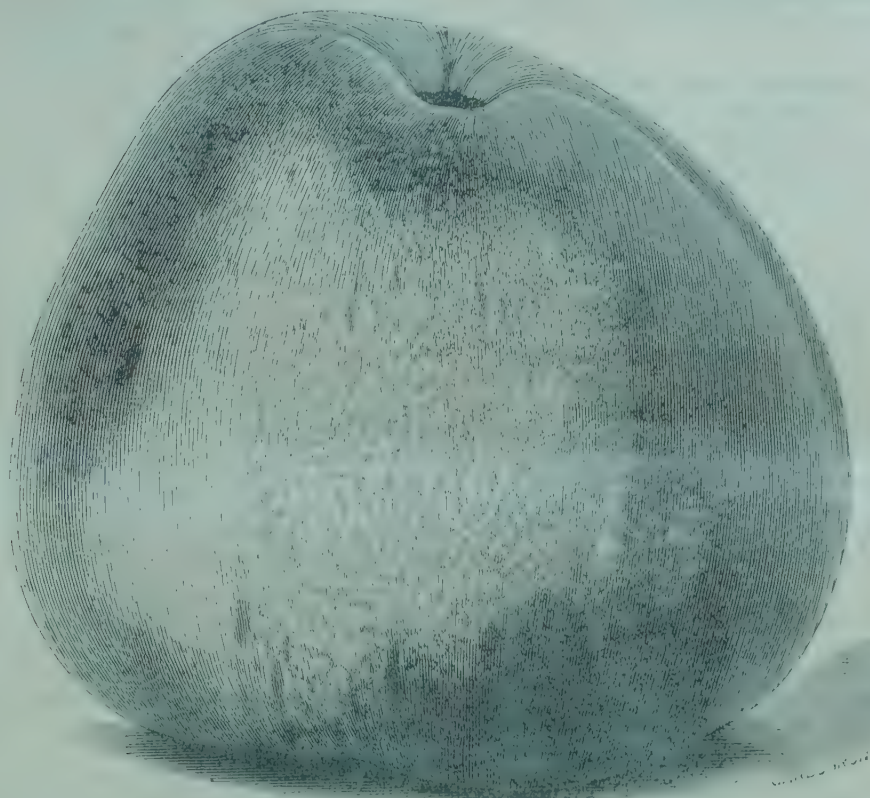


FIG. 72.—APPLE CHELMSFORD WONDER. (SEE P. 250.)

Mossiae, and the other sectional representatives of *C. labiata* are, and that by its beauty, the delicate tint of its flowers, and its fragrance, it was entitled to rank as one of the best and most distinct of them.

But *C. labiata* Schrodæ has never been plentiful in gardens, and few collections could boast of such a noble display as that shown in the photograph taken in Mr. Broome's Cattleya-house this summer, the greater part of the flowers seen in the picture being of that type, and among them a good specimen of the white *C. Schrodæ alba*, some fine *C. Mendeli*, *Lælia purpurata*, both dark-coloured and white-petaled forms; *Lælio-Cattleya* × *Schilleriana*, *Lælia cinnabarina*, *Oncidium sarcodes*, and *O. leucochilum*,

Dendrobium chrysotoxum with sixteen spikes, *D. crepidatum*, *D. crystallinum*, *D. thyrsiflorum*, *D. densiflorum*, *D. Brymerianum*, *D. superbum giganteum*, *Cypripedium Lawrenceanum*, *C. villosum*, &c. With them are arranged some foliage plants, *Anthuriums*, &c., the most prominent of which is the fine *Anthurium Andreanum giganteum*.

Mr. Broome has been an enthusiastic amateur gardener for many years, and from his gardens at Didsbury, Manchester, many years ago, was one of the earliest exhibits of good hardy herbaceous perennials and Orchids. Mr. A. C. Axtell, Mr. Broome's gardener, is also a clever cultivator of Orchids, to which the fine result seen in our illustration (fig. 71, p. 255) will amply testify.

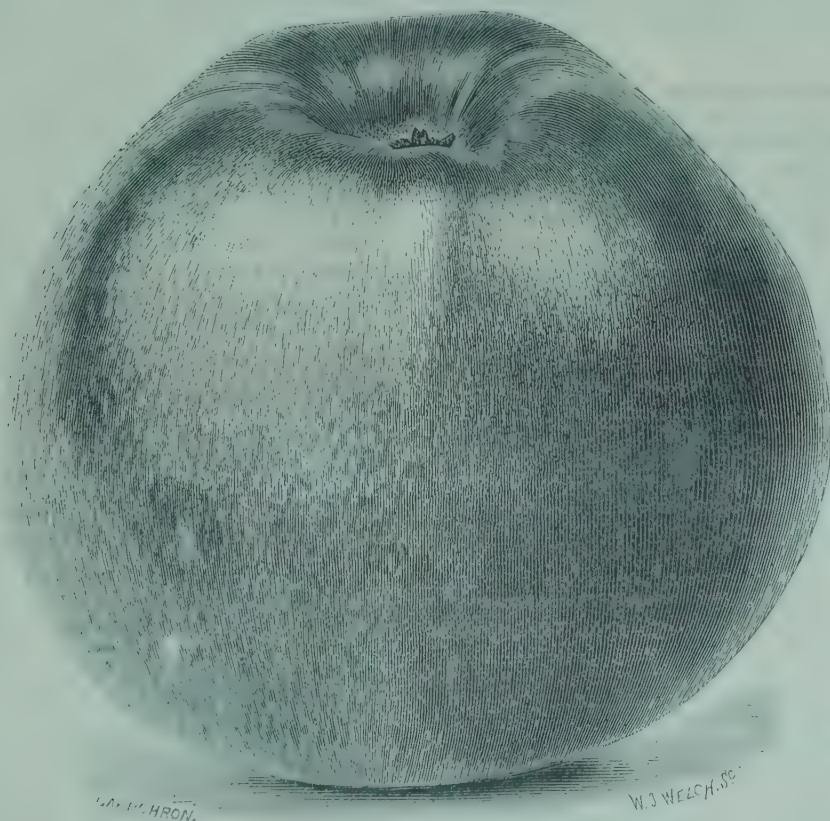


FIG. 73.—APPLE BISMARCK. (SEE P. 250.)

BEEES IN A JAM FACTORY.—I have just read in the *Dartford Chronicle* that Messrs. T. Wood & Son's jam-factory, at Swanley Junction, has been besieged by bees, until the factory became on more than one occasion unbearable to the workers. They settled upon the jams and syrups till the place was literally covered with them, and the factory had to be closed for a time. The men, women, and girls, it is stated, were severely stung, and the bees for a time took possession of the place. They were as speedily as possible stupefied, and subsequently, on one occasion during the week, upwards of three bushels of bees were swept up. Now this to my mind involves a very serious matter; as for instance, not only the intolerable nuisance and mischief done at the factory, but the owners of the bees must suffer very considerable loss, itself a very serious item at this season of the year, unless the bees recovered after they had been removed from the factory, and had not been destroyed. I opine to obviate similar visits from these useful and industrious little insects, some arrangement could be made by having strong canvas or gauze placed over all the ventilators and windows, and temporary doors made of the same material, of sufficiently fine mesh to admit air and yet keep out these busy intruders. *G. F.*

PLUNGED POT PLANTS.—This is a somewhat alliterative heading to a paragraph, but it indicates exactly what I am referring to. In no garden have I seen plants of so many diverse kinds and descriptions used for garden decoration grown in pots and plunged in the turf or elsewhere as at Sandhurst Lodge. Certainly they may be counted by hundreds. There is one group so plunged on a lawn slope, with trees and Yews for a background, each plant fully 4 feet from the other. They are in most cases large, and include Ivy-leaf Pelargoniums, *Solanum jasminoides* flowering profusely; fibrous Begonias, tall Plumbagos, beautiful white and red Swainsonias, *Diplacus glutinosus*, *Habrothamnus*, yellow and red; Marguerites, Fuchsias, and other plants. Close by is a large group of Fuchsias. On another point of the lawn is a lot of fine Cape sweet-perfumed Pelargoniums. Just in front of the gardener's cottage are noble bushes of charming Fuchsias literally masses of bloom, 5 feet high and as much through. These are really noble specimens, and nine years old. Dropped into the turf or in the long grass of the wild garden lower down in the grounds are numerous fine plants of the Coral-bush, *Erythrina crista-galli* carrying huge spikes of bloom. *Solanum jasminoides* is again here abundant, and singularly beautiful. But the plants of Cloth of Gold Fuchsia are very effective. So, too, are Agapanthus in full bloom. *Habrothamnus Newelli*, 5 feet in height, in profuse bloom, as also *H. aurantiacus*, 3½ feet high, carrying numerous spikes of yellow flowers. Pelargoniums are also specially charming. The places of these tender plants are in winter filled with hardy ones, and these serve to give a pleasing aspect to these portions of the gardens during a dull season. *A. D.*

TOMATOS AND MELONS.—The remarks by Mr. K. D. Long on p. 200, respecting the successful cultivation of Tomatos and Melons in the same house, although very interesting, was scarcely an answer to "C. J. P." Tomatos planted in a vinery or Peach-house offer widely different conditions to Tomatos cultivated with Melons. During the past four seasons I have had to meet a heavy demand for Melons, and have been unable to spare a whole house for Tomatos, therefore I have cultivated them in a part of a house with mid-season Melons. My practice has been as follows:—Early in March I put out strong plants of an early variety of Tomato, and give them fairly generous treatment. They are not given unlimited root room, however, and by the time my Melons (which are planted some ten days later) are set, I get a good set of fruit on the Tomatos. When the smallest of these Tomatos have attained the size of a Walnut (some fortnight later), I pinch out the top of the plant, and induce the crop to ripen as soon as possible. When the main part of the crop is ripened, I cut out the old plants, and after slightly renovating the soil, immediately put out other strongly-grown plants. By the time the Melons are finished, the second crop of Tomatos is nearly set, and the plants generally afford plenty of fruits until the end of the season. The reasons I plant twice are two-fold. In the first place, the Tomato plants, if grown throughout the season generally become badly

diseased, the treatment necessary for the Melons being unsuitable to Tomato cultivation. After the first good set of Tomatoes, which is obtained while the Melons are making their early growth, the Tomato plants begin to dwindle, and from this they would never recover. By double planting, the second batch of plants is setting fruits when the Melons are ripening, and the conditions of the house being then suitable to them, they amply repay for the extra trouble. *Frederic Tugwood.*

THE CULTIVATION OF CACTI.—In reply to many questions addressed to me by Cactus lovers, I give the following details concerning my method of growing these plants:—I never shade those which are under glass from the sun. Even during the recent extreme heat I did not whiten the glass, but gave as much air as possible. This plan I have found to answer very well, and I have now again in bloom many plants which usually flower but once, and I attribute this second flowering to the ardent rays of the sun. I naturally water more than usual, even twice a day during the exceptionally hot weather, and I have never known a summer in which my plants have grown so well. If the house cannot be sufficiently ventilated, I think it would be wise to whiten the lights slightly, and in that case to water less. To those who ask me how I keep my plants clean, I answer, it is more especially in summer that insects (mealy-bug) have to be guarded against. If I see that a plant is attacked I syringe it vigorously with clean water. I wash it, so to speak, completely, roots and all. I then let it dry thoroughly, repot it, and the plant is none the worse. Advantage should be taken of a very fine day to effect this washing, and it should not be done in the winter. I have tried everything that has been recommended in this way as an insecticide, but with no result. In winter I kill insect pests with a little stick pointed like a pencil, or with a pin. *F. Laet, Contich, Belgium.*

HARDY BAMBOOS.—It is very gratifying to note the increase that has been made in Bamboo planting during the past few years. As the hardness of the Bamboos becomes more generally known, we may yet see the stiff and heavy-looking Laurel (*Cerasus*) and Privet, offensive to the eye from constant repetition, entirely ousted from our ornamental shrubberies. More especially is this desirable in the vicinity of London, where the evergreen shrubberies are ever dull and dirty from the continual deposit of soot and dust. The graceful, arching growths of such plants as *Arundinaria nitida*, *Phyllostachys aurea*, *P. Henonis*, *P. nigra*, *P. flexuosa*, and *P. viridiglaucescens* occurring occasionally in the foreground; with *Arundinaria Simoni*, *Phyllostachys mitis*, and other columnar species planted here and there in the background, would do much to render the whole artistic and cool to look upon. Planted in association with dwellings, provided with verandahs and other forms of subtropical architecture, and with ornamental water, the Bamboo is at home and in harmony with its surroundings. As a background for such plants as *Lobelias* of the cardinalis group, or other tall-growing plants, whose flowers range in colour from pink to deep crimson, or intermixed with ornamental foliage shrubs typified by *Prunus Pissardi*, rose-coloured Maples, crimson-stemmed *Cornus*, &c., it would be difficult to find any plant more suitable than the Bamboo, the light rich green of which would greatly intensify the colours of those plants. It is, however, as single specimens on lawns that we see them at their best; those species of flexuose habit are especially beautiful as such, if a cool site be selected for them, with shelter from cutting east winds. They are not difficult to suit in regard to soils, provided it is fairly good and well trenched. If it be very poor it is best to take out a small area and fill in with rough fibrous loam, mixed with well-rotted kitchen-garden refuse, road-sweepings, and, if available, the clearings of a shallow pond sweetened by exposure, the more half-decayed leaves there are in it the better. At Isleworth they grow remarkably well in a light, dry soil if given copious supplies of water during the summer months. The leaves quickly curl and turn yellow if the plant is allowed to become dry at the roots. It is advisable to slope the surrounding soil towards the plants, so that they get the full benefit of storm-water. Many of the hardier species make useful decorative plants in pots for balconies, &c., placing the pots in shallow pans containing just the amount of water the plants will absorb in a single day. During very hot weather, plants treated in this way keep in good condition throughout the whole summer. The quickest way to propagate Bamboos is to sever the suckers from the parent stool as soon as they have formed independent

roots, and to pot them up, keeping them in a warm-house till they are established. *George B. Mallett, Isleworth.*

WHAT IS THE CORRECT NAME OF THE "OLD DOUBLE-WHITE" PRIMULA?—Is *Primula sinensis* correct? [Yes, as far as it goes. ED.] If so, why cannot nurserymen, &c., catalogue it as such? And if that is an insufficient description, add "old double-white," or "double-white" after the Latin specific name. I find some nurserymen catalogue it as *Primula*, double-white, which is rather an indefinite description, as there are double-white of the Chinese section; and I have seen it received from the trade under the name of *Primula prænitens* (a synonym of *sinensis*). If *P. double-white* is definite, how do we describe the different kinds of colour (i.e., from white to pink) of the same species? I should be glad if any one would give a definition of these synonyms, as I am sure there are many that would be glad of the information. And it taxes one's powers of plain speech to describe it to any one not acquainted with it; and even mistakes are made when ordering it from the trade. *Thos. Appleby.*

THE PERFECT TOMATO.—Although we have long had a "Perfection" Tomato in cultivation, no one seems to regard that, or perhaps any other variety, as being the "perfect" one. I fear, judging by the samples sent to the Drill Hall from time to time, that some ignorance still exists as to the merits, and very high ones, too, of dozens of so-called distinct varieties in commerce. Certainly in cropping qualities, and in capacity to produce fine fruits of rich colour, none others can well hope to excel them. The grower who has a Tomato that he finds to be very productive, and thinks it distinct, quite forgets, if he did know, that scores of other growers also have wonderfully productive varieties, indeed, all varieties are fairly productive if only properly grown. The primary need to create the perfect Tomato is not size or colour, or abundant cropping. We have these features in abundance; indeed, so far as size is concerned, we have rather too much of it. Then too many of the fruits are, if broad, yet too flat, thus holding too much vapour in solution, otherwise moisture; and the presence of that on the upper or stem side of the fruits does much to hasten cracking of the skins, just as too much accumulation on the lower or flower side helps to promote that fungoid disease called black-spot. Then there is the common evil found in the broad flattish fruits of a broad spot on the skin, radiating from the floral centre, a product of partial fasciation, or of imperfect fruit formation. Thus we get nearer to the perfect Tomato in the medium-sized, rounder forms. Mr. W. Roupell was kind enough the other day to give me a remarkably handsome sample fruit of his selected *Chemin Rouge*, $4\frac{1}{2}$ oz. in weight, round as a ball, and devoid of split or speck, and very solid in flesh. Such a variety, if a good cropper, and having real flavour, would be a first-class one indeed. *A. D.*

HIBISCUS SYRIACUS (SYN. ALTHÆA FRUTEX).—Generally speaking, this hardy species and its numerous varieties are not cultivated so frequently as their merits warrant. The "Syrian Mallow" was introduced from Syria in 1596, the type being purple in colour with a crimson blotch at the base of each petal; but there are now fully a score of really good varieties, both single and double, with pure white, pink, red, blue, and the intermediate shades of colour. I have had no experience with this shrub in light soils, but in a moderately heavy soil it has stood this summer's prolonged drought wonderfully well, and I recently saw some bushes quite 6 feet in height flowering freely under the shade of Plane and Copper Beech Trees. *A. C. B.*

MONTBRETIAS.—I have never advised that the bulbs should be dried over hot-water pipes, as suggested by Mr. Conway on p. 240. But I did suggest in the *Gardeners' Chronicle* for August 27 that they be lifted in October or November, and placed in boxes, working some potting-soil round them; afterwards to be removed to a Peach-house or vinery near the hot-water pipes. All cultivators of these plants are not favoured as Mr. Conway evidently is at Richmond in the matters of climate and soil. To those growers who have a cold retentive soil, I would specially recommend that the bulbs be lifted each season, and treated in some such manner. In such an exceptionally dry, hot autumn as the present, the bulbs will doubtless ripen well in the open, consequently the bulbs may be taken up and stored for the winter in the same way as the *Gladiolus*

are stored; but such a season as 1898 has been, rarely happens. About twelve months ago, a neighbouring gardener asked my opinion respecting a large bed of *Montbretias* growing in an open south-west aspect. The soil was light and good, and the bulbs had been planted three years, during which time they had grown luxuriantly, but had produced no flowers. Being offered some of these bulbs, the roots of which, by the way, were much matted together, I gladly accepted them. On arrival they were put into boxes and treated as recommended by me on p. 166, and with most satisfactory results. The bed has been admired by a great many visitors during the summer. The varieties are *M. Pottsi* and *M. crocosmiflora*. The position in which I planted the bulbs is exactly similar to that in which my friend has them, and the soil is similar. Why should they flower so well with me, and not with him? The reason is obvious. By the winter treatment the bulbs were given, they became the better matured. *H. T. Martin, Stoneleigh.* [Our correspondents live in widely separated localities, and some of the details necessary to the perfect cultivation of *Montbretias* in Warwickshire may not be so essential in the Richmond district, where Mr. Conway resides. It is gratifying to know that both cultivators are disposed to lift the bulbs annually or biennially. If this be not done, they become so closely packed through the rapidity with which the bulbs increase in number, that the growths are too weak to flower satisfactorily. Whether it be necessary to keep the bulbs inside during winter, or more desirable to re-plant them at once in the open, will depend upon the locality, and the soil and sub-soil. During August we happened to visit Stoneleigh Abbey, and the *Montbretias* there, as Mr. Martin states, were then giving a glorious display of bloom. ED.]

—It is interesting to note that whilst some growers of these hardy bulbs seem to regard annual lifting, drying, and replanting as essential, others should treat them with somewhat scant respect. Thus, recently I saw, both at St. James', West Malvern, and at Madresfield Court, huge masses of *Montbretias Pottsi* and *crocosmiflora* that had been planted some two years, and were as dense in stems, leaves, and bloom as it was possible for these plants to be. I have nowhere else seen such huge clumps as were here grown. Amongst hardy plants for massing in this big way, comprising thousands of roots, few present more striking or pleasing effects than these *Montbretias* do. It will be, perhaps, needful to lift and replant the bulbs in the winter, when, if the same spaces be utilised, no doubt the soil will be removed, and be replaced by fresh, then the finest bulbs planted thickly, will soon refurnish the huge beds. At St. James', a very large collection, comprising apparently all the varieties in commerce, is grown for trial and comparison. The quantities in each case vary, but there are plenty of plants, and abundance of flowers. Besides *Pottsi* and *crocosmiflora*, there is *Bouquet parfait*, *Reine d'Or* (fine orange), *Eldorado*, *Transcendent* (orange-red), *Etoile de Feu* (rather deeper in colour), and several others. Those mentioned seemed to be amongst the best. If the clumps or masses remain too long undisturbed, they become so thick or dense that very weak growths and fewer flowers result. The two-year-planted masses at the places named were, earlier in the month, glorious in colour, and wonderful in quantity. Pleasing as the spikes are when set up in vases, they always look best on the plants. *A. D.*

RIPENING OF CANNA INDICA SEED IN THE OPEN AIR.—There are doubtless many proofs in our gardens of an unusual season, but I fancy that the fact of a *Canna* seedling and ripening in the open air is as striking as any. This particular plant was potted and placed in the garden, where it bloomed in July. I send you the actual seed-pod; one seed I have removed in order to get a seedling next year as a memento of a record season. I may, of course, be mistaken about the rarity of the occurrence. *S. Gibson.*

LONICERA HILDEBRANDIANA.—Mr. Moore is to be congratulated on being the first to flower this plant in Europe. He sent a flowering branch to Kew, produced, he said, by a plant that had been grown in a cool-house, where it had plenty of light and air, and rather restricted root-room. At Kew, plants have been tried under various conditions, from the open border to a tropical house, and whilst plenty of growth has been obtained, no flowers have been developed, notwithstanding alternations of liberal treatment and comparative starvation. It will be remembered that Sir Henry Collett described the plant in the *Journal of the Linnean Society*,

vol. xxviii, p. 6, as "a conspicuous shrub, with large dark glossy leaves, and fine crimson flowers 7 inches long, and by far the largest of any known species of Honeysuckle." Mr. Hildebrand, Superintendent of the Southern Shan States, after whom the plant was named, sent seeds of it to Kew in 1893, and plants raised from them were widely distributed. Some were tried out-of-doors at Kew, but they were either killed or severely crippled by the first winter. In a note from Dr. Henry, published in *Garden and Forest* in 1897, this *Lonicera* is described as occurring wild in China, and as having flowers of a deep yellow colour. In the same year Mr. Hildebrand wrote of the grand display made by some plants of it in his garden in Burma, and described the flowers as cream-yellow, becoming darker with age. The flowers forwarded to Kew by Mr. Moore were certainly apricot-yellow, and not "brilliant orange-scarlet" as described under the excellent illustration published in the *Gardeners' Chronicle* on September 17, p. 219. This plant will probably succeed best in such places as the Riviera, California, and South Africa. So far it has been as disappointing as a garden plant as its

peculiar reddish-green. The berries grow singly and somewhat sparingly, and present upon the summit a curious little crater, the floor of which is flat, the persistent style standing like a pillar in the centre, and the margin representing the remains of the calyx. When newly ripe, they are covered, like Plums and Grapes, with a beautiful glaucous "bloom," and are filled with juice resembling port wine. The height of the plant seldom exceeds 30 inches, and is usually much less; the branches are angular, wiry, and very tough. *R. D.*

THE MYRTLE FRUITING.—Has it come under the notice of any that the common Myrtle is fruiting this season in the open? It will do so during dry summers in the southern counties of England. I have a note to the effect that in 1865, when the summer was warm and dry, Myrtles growing out-of-doors at Appley Towers at Ryde, in the Isle of Wight, not only bloomed with great freedom, but during autumn and early winter they were quite covered with fruit. At that time the Myrtles at Appley Towers formed a sort of avenue; they were then 10 to

SOCIETIES.

ROYAL HORTICULTURAL. BRITISH-GROWN FRUITS AT THE CRYSTAL PALACE

(See also p. 254).

September 29, 30, and October 1.

THE Royal Horticultural Society is again holding an exhibition of first-rate British grown fruits at the Crystal Palace. Only a veritable specialist could see any indication there that 1898 is an indifferent fruit season. There are a few more exhibits than in 1897, and the falling off in colour and size of Apples and Pears, though a fact, is only to be seen after very careful inspection. The new features included in the schedule are referred to in another column, and Sir TREVOR LAWRENCE, in a speech to the judges after luncheon, gave good reasons for the additions that have been made. The market growers' classes, and those in which fruit growers from certain counties meet under similar conditions were well responded to, and will be popular and useful in the future.

On this occasion the Society has awarded the first two of the new fruit-medals that have been established in memory of the late Dr. Hogg. One of these was awarded to a characteristic exhibit from Messrs. T. F. RIVERS & SON, and the other to a collection of fruits from Messrs. JAMES VEITCH & SONS.

The toasts at the luncheon included "The Crystal Palace Company," proposed by the Chairman, and the "Judges" proposed by Mr. H. J. VEITCH, who stated that in all his experience he had never seen more satisfactory judging. The toast was responded to by Messrs. J. MCINDOE, A. H. PEARSON (Chilwell) and PETER KAY (Market grower).

As showing how the Maidstone district again accounted for itself, it may be mentioned that Mr. GEO. WOODWARD succeeded in winning no fewer than forty-three first and eleven second prizes.

The arrangements are good, and the management at the Crystal Palace, that of the Secretary of the Royal Horticultural Society, of Mr. WRIGHT and Mr. HUMPHREYS from the Chiswick Gardens are worthy of all commendation.

DIVISION I.

GARDENERS AND AMATEURS ONLY. COLLECTIONS OF FRUIT.

THE most important class for a collection of fruits fell to the redoubtable Mr. McIndoe, gardener to Sir JOS. W. PEASE, Bt., Hutton Hall, Guisborough, Yorks. He had twelve first-rate dishes, and they consisted of the following varieties:—Gros Maroc and Muscat of Alexandria Grapes, both varieties being shown in excellent condition in regard to colour and finish, and the bunches of moderate but sufficient size. Of Peaches there were Admirable and Sea Eagle, Nectarines, Pitmaston Orange; Pears Souvenir du Congrès, and Williams' Bon Chrétien; Apple Lady Sudeley; Bryanston Green Gage; Figs, Brown Turkey; a Champion Melon, and a Queen Pine. A capital lot of choice fruit, every dish of which was in the most perfect state of consumption.

The not less well-known fruit exhibitor, Mr. J. H. Goodacre, gr. to the Earl of HARRINGTON, Elvaston, Derby, was 2nd, and the only other exhibitor in this class. His Muscat Grapes were bigger in bunch, and less highly finished. His Black Grapes were Hamburgh, his Queen Pine smaller, but his Apples and Pears, Melons, Peaches, Plums and Nectarines, completed an exhibit of great merit.

The best collection of eight dishes was shown by Mr. Jas. Dawes, gr. to M. BIDDULPH, Esq., M.P., Ledbury Park, Ledbury. Excellent fresh looking Gros Maroc Grapes, good in bunch and berry, were staged in this exhibit; and rather less choice bunches of Muscat of Alexandria. He had Worcester Pearmain Apple, Williams' Bon Chrétien Pear, Princess of Wales Peach, Pine-Apple Nectarine, a Seedling Melon, and Jefferson Plum. Next in honour in this class was Mr. Tidy, gr. to W. K. D'ARCY, Esq., Stanmore Hall, Middlesex, in whose exhibit there was very meritorious Humboldt Nectarines, Sea Eagle Peaches, Royal Favourite Melon, and Grapes Muscat of Alexandria and Alnwick Seedling of moderate size, colour, and good finish. The 3rd prize was won by Mr. F. Cole, gr. to Sir CHAS. RUSSELL, Bart., Swallowfield Park, near Reading, and this exhibitor

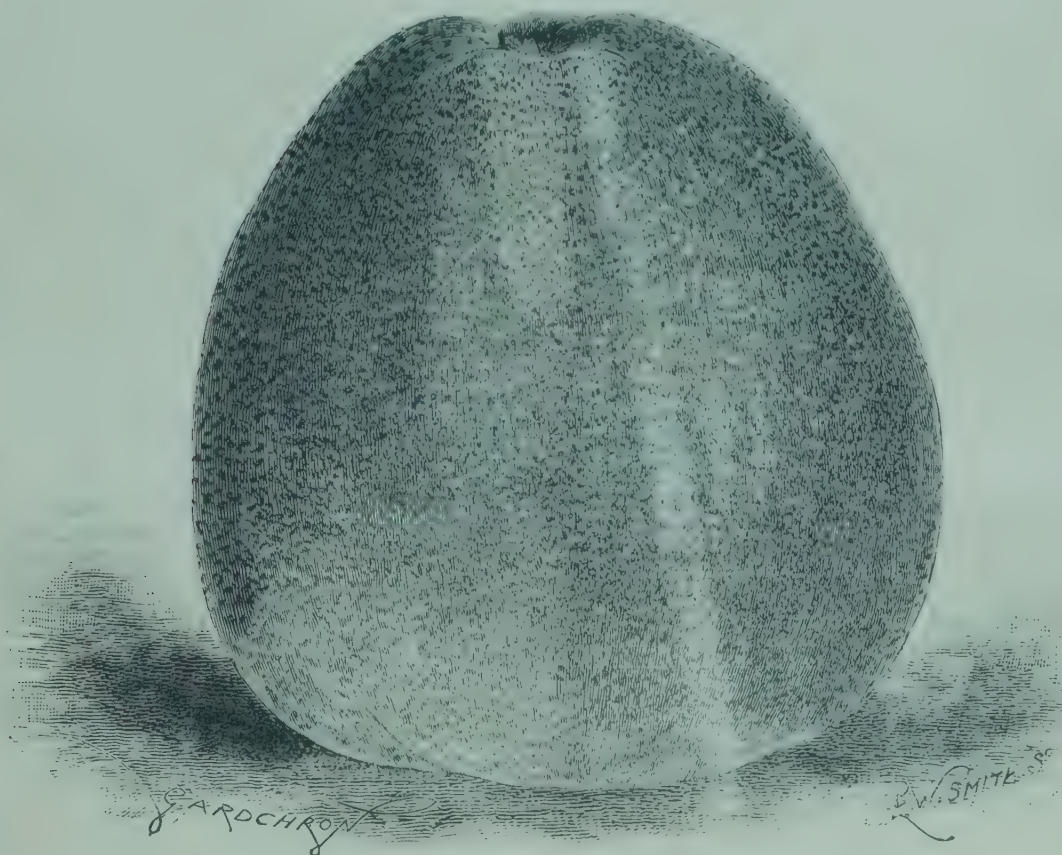


FIG. 74.—APPLE LORD HINDLIP: ONE OF THE NEWER APPLES.

countryman, *Rosa gigantea*, an equally remarkable plant in Burma, but a failure in gardens here, where it grows stronger than the strongest briar, but never flowers. *W. W.* [The colour of the specimens sent to us was much deeper than apricot-yellow. *ED.*]

THE WHORTLEBERRY.—When at the Taunton flower-show in August last, I tasted tarts made of Whortleberries, and the fruits in a stewed form also. It was said that in August the women and children go out on to the Somersetshire hills and downs, and gather from this hardy little shrub the purple berries about the size of Peas, bring them into the town, and sell them to the dealers. The berries are but little esteemed in a raw state, but made into tarts or puddings they make a very agreeable change, and though somewhat astringent, and apt to leave a stain on the lip, they have one advantage—they are largely destitute of the seed-grains. Mr. Leo Grindon gives us an attractive picture of the Whortleberry in its home:—"Usually growing in large patches, and often occupying immense areas of moor and mountain surface, for, like the heather, and some among ourselves, it rejoices in great solitudes, that have never felt the plough, the bright green of the foliage never fails to give pleasure. The flowers are pretty, being bead-like, almost globular, waxy in texture, and of a

12 feet in height, and several fully as much in diameter. The season of 1865 was very similar to that of 1898, for during the preceding winter there was no frost to hurt the specimens, and as their wood was well ripened owing to the autumn having been fine and dry, they bloomed and fruited freely. Mr. Leo Grindon intimates that Myrtle-berries are prized for eating in the Levantine countries; and Miss Beaufort, afterwards Lady Strangford, in her book on *Egyptian Sculptures and Syrian Shrines*, published in 1861, says: "While staying at Damascus I made my luncheon of the perfumed berries of the Myrtle." Dr. Lindley says of the fruit of *Myrtus communis*, that they "have a sweetish powerfully aromatic taste, are eaten in a fresh state, or dried and used as a condiment." *Eugenia Ugni*, which was introduced in 1845, is now classed with the Myrtles. It was thought at the time that its fruit, much esteemed in Chili, would be acceptable in this country, as they possess an agreeable aroma and pleasant taste. Mr. Grindon says that "the berries make an excellent tart, or the juice may be expressed and mixed with water, to make a delicious cool drink, with odour of rosemary; or they may be made into jam. So penetrating is the aroma that it clings to the fingers after gathering." But it can scarcely be expected to fruit in the open elsewhere than in south-west Britain. *R. D.*

had capital Black Hamburg Grapes and several other dishes of fine fruits. There were two unsuccessful exhibitors in this class.

GRAPES.

In the class for six distinct varieties, two bunches of each, the best prize was obtained by an exhibit from Mr. J. H. GOODACRE. He had, of black Grapes, Alnwick Seedling, Gros Colmar, Madresfield Court (rather poor in size of bunch), Black Hamburg, and Black Alicante. His only white variety was Muscat of Alexandria, two fine bunches. Generally the exhibit was one of serviceable, well-coloured bunches of moderate exhibition size. Mr. F. Cole, gr. to Sir CHARLES RUSSELL, Bt., Swallowfield Park, Reading, who was 2nd, had also some capital Grapes. His Foster's Seedling were large in bunch, though not in berry, and the finish was grand. His Muscats were good in size, but lacked the best finish. Then he had nice specimens of the new Grape, Appley Towers, Cooper's Black, Black Hamburg, and Black Alicante.

More extraordinary Grapes than those in either of the two exhibits already mentioned were shown by Mr. W. Taylor, gardener to C. BAYER, Esq., Tewkesbury Lodge, Forest Hill, London, S.E. Several of these bunches were abnormal in size and shape, but it must be encouraging to suburban fruit growers to see such a collection of Grapes shown from a district only a good walk from Charing Cross. There were four exhibitors in this important class.

The class for four dishes in three varieties was won by Mr. JAMES DAWES. He had very long thin bunches of Muscat of Alexandria with good berries, good bunches of Gros Maroc, and specimens of Black Alicante that would have been larger in berry had the bunches been thinned more severely. The 2nd prize was taken by Sir E. H. CARBUTT, Bart., Nanhurst, Cranleigh, Surrey (gr., Mr. A. Belcher), whose exhibit was very close in merit to the one already noticed. The 3rd prize exhibit from Mr. J. Jones, gr. to Mrs. F. NEED, York House, Malvern, contained finely berried bunches of Gros Maroc, Madresfield Court and Gros Colman. There were two unsuccessful exhibits.

In the Black Hamburg class, there were seven exhibits of three bunches each, and generally these were most satisfactory for the season. The best were from Mr. F. COLE, the finish on whose Grapes was beautiful. Mr. W. Mitchell, gr. to Mr. J. W. FLEMING, Esq., Chilworth Manor, Romney, was 2nd, and Mr. J. H. GOODACRE, 3rd.

Of Madresfield Court there were fewer collections shown, there being four only. Mr. W. MITCHELL had the best, and these were not remarkable from the exhibition point of view. Mr. J. JONES was a fairly close 2nd, and Mr. J. H. GOODACRE was 3rd.

Of Gros Maroc there were some fine exhibits, the bold bunch and large highly-coloured berry characteristic of this variety being very effective on the exhibition tables. Those from Mr. W. Allan, gr. to Lord SUFFIELD, Gunton Park, Norwich, represented the variety capitally from the point of view of size, but the finish and colour were better developed in the specimens from Mr. W. Mitchell, who was 2nd. Mr. George Reynolds, gr. to the Messrs. DE ROTHSCHILD, Gunnersbury Park, Acton, W., was 3rd, and there were four unsuccessful exhibitors. The above class was one for Gros Maroc or Gros Colman, but the former variety won all of the three prizes.

Black Alicante was exhibited as well as any of the varieties. There were six exhibits of three bunches each, and those from Mr. WM. ALLAN were remarkable for extra size, in which the shoulders so characteristic of the variety were fully developed, and for fine colour; a capital trio for 2nd place came from Mr. Wm. Howe, gr. to Sir H. TATE, Park Hill, Streatham. Mr. F. COLE was 3rd.

Of Lady Downes (Black) there were four exhibits, and some of these though almost ripe, lacked the finish so necessary in an exhibition. The best were from the London suburban garden of C. BAYER, Esq., Tewkesbury Lodge, and were most commendable. The 2nd prize exhibit came from Mr. W. H. Bacon, gr. to Sir MARCUS SAMUEL, Mote Park, Maidstone; and Mr. JAS. DAWES was 3rd.

The "any other black class" was won by very large, moderately even, bunches of finely coloured berries of Mrs. Pince's Muscat. This exhibit was from Mr. W. MITCHELL. The variety, Appley Towers, shown by Mr. GEO. REYNOLDS, was placed 2nd; and Mr. TIDY, with Alnwick Seedling in good condition, was 3rd. There was no other variety than mentioned exhibited in this class.

The best Muscats of Alexandria came from Hillington Court, Uxbridge, the gardens of LORD HILLINGTON (gr., Mr. A. R. Allan), a son of Mr. Allan of Gunton Park Gardens, Norwich. These bunches were mammoth in size, with large berries also. They were not of the very best finish, but well merited the prize awarded them. The 2nd prize was won by Mr. G. DUNCAN, gr. to C. J. LUCAS, Esq., Warnham Court, Horsham, who had also very large bunches, and such as would frequently win first honours. There were seven other exhibitors of Muscats.

The variety Mrs. Pearson was best shown by Mrs. WINGFIELD, Amptill House, Amptill (gr., Mr. W. J. Empson), and he was followed by Mr. GEORGE REYNOLDS and Mr. G. Lane, gr. to Miss RIDGE, Highfield, Englefield Green, Surrey. There were four exhibitors.

Chasselas Napoleon proved to be best in the "any other white" class. Three very fine bunches of this variety were shown by Mr. G. REYNOLDS. Mr. G. LANE, with larger, less well-coloured bunches of the same variety was 2nd; and Mr. WM. ALLAN, with a moderate exhibit of the variety Duke of Buccleuch, was 3rd. Foster's Seedling was also shown in this class.

FIGS.

There were only two dishes of Figs shown, and both were of the variety Brown Turkey. Mr. W. MITCHELL won 1st prize.

COLLECTIONS OF HARDY FRUITS.

In these classes there were excellent collections of fruits, and most satisfactory competitions. In the principal class for fifty dishes to be grown entirely in the open there were five competitors. The best exhibit came from Mr. R. POTTER, gr. to Sir MARK W. COLLETT, Bt., St. Clere, Kemsing, Sevenoaks. This exhibitor had covered the board with white tissue, and between the dishes had trailed Ivy shoots, sprays of the Cape Gooseberry, and other berries. Of Apples in the collection were splendid specimens of Annie Elizabeth, Warner's King, Stone's Pippin, Grenadier, Mère de Ménage, Cox's Orange Pippin, Ribston Pippin, Lane's Prince Albert, &c.; good Pears, were Beurré Bachelier, Duchess d'Angoulême, Souvenir du Congrès, Pitmaston Duchess, Beurré Hardy, Comte de Flandres, &c. Then there were Peaches Lady Palmerston; Nectarines Royal George, Princess of Wales, and Dr. Hogg; Plums, Dymond, Pond's Seedling, Cox's Golden Drop; Fig, Brown Turkey; Mulberries, Kent Cob Nuts, Warrington Gooseberries, &c. The 2nd prize was very well won by Mr. John Powell, gr. to Col. BRYMER, M.P., Ilslington House, Dorchester. He had even greater variety than the 1st prize-winner, for in the collection were remarked Sweetwater Grapes, Red Currants, Damsons, Nuts, Plums, Peaches, Nectarines, Morello Cherries, White Dutch Currants, &c., besides the Pears and Apples.

The remaining collection of hardy fruit was for thirty-six dishes distinct, grown partly or entirely under glass. The exhibits capitally represented orchard-house cultivation. The 1st prize was won by Mr. R. POTTER, who was 1st in the class just mentioned. The fruits in this class were of course finer in size and quality, but we must forbear to particularise to a great extent. He had excellent Gros Maroc Grapes, also Black Hamburg and Foster's Seedling. Then there were Apples, Pears, Plums, Peaches, Figs, &c., all very fine, large, mellow, and of most tempting colour. Mr. MCINDOE, who in this case was 2nd, had an exhibit that at a superficial glance would certainly have appeared equal to that from Mr. Potter. His Grapes were certainly better. He had Alnwick Seedling, Foster's Seedling, and Gros Maroc, and they were all capital. The excellence of the collection generally is a first class testimonial to the exhibit that was placed before it.

DIVISION II.

NURSERYMENS' COMPETITIVE CLASSES.

Collection of Fruit-trees bearing Fruit in Pots.—The only exhibitors in this class were Messrs. RIVERS & SON, Sawbridgeworth, to whom the premier prize (Gold Medal) was awarded. The exhibit was in the usual high-class style characteristic of the firm, the colouring of the several kinds of fruit, their large size, and profusion of bearing, were all most remarkable. The central plant were a dwarf standard, yellow-fleshed Peach (seedling, not named), heavily cropped; smaller Peaches comprised Lord Palmerston, Albatross, Gladstone, and another seedling of high colour and great promise. Plums consisted of the new Rivers' Late Orange, extra fine in colour, and laden with fruit; President, a late purplish-red variety; Cox's Golden Drop, and Pond's Seedling. Pears comprised Conference, a beautiful russety fruit; Marie Louise, good for pot culture; Louise Bonne of Jersey, and Pitmaston Duchess. Apples of Blenheim Orange, highly coloured; Emperor Alexander, also good; Bismarck, Melon Apple, very pretty fine fruits; and Bijou. Dwarf Figs were also included with ripening fruit upon them. (It is regrettable that other competitors do not enter the lists in this class).

For a collection of hardy fruits, grown partly or entirely under glass, to illustrate orchard-house culture, Messrs. BUNYARD & Co., Maidstone, were in this instance the only exhibitors, taking the Society's Gold Medal. Pot trees were included here, being fine samples of culture; these comprised, of Pears, Durondeau, extra fine, and of high colour (this is a first-rate dessert Pear for pot-culture); Pitmaston Duchess and Doyenné du Comice were also included. The picked fruits of Pears comprised grand examples of

Emile d'Huyet, Beurré Rance, Beurré Hardy, Pitmaston Duchess, Durondeau, Marie Benoist (very fine), Conference (very large, but not russety). The finest Apples were Washington (large and fine), Gascoigne's Scarlet Seedling (unusually fine in colour), Peasgood's Nonsuch (similarly good, with a rich bloom suffusing the fruits), Cornish Gillyflower, Wealthy, Cox's Orange, Stone's Apple, and King of Tomkins' Co. Plums were well shown also, the best being Magnum Bonum, Pond's Seedling, Victoria, Cox's Golden Drop, Monarch, and Late Black Orleans. The best Peaches were Princess of Wales, Sea Eagle, Gladstone, and Nectarine Peach, all well developed. Some Figs in pots were also shown, Bourjassotte Grise being in excellent character.

For a collection of not fewer than thirty, or more than fifty, distinct varieties of hardy fruits, in baskets or dishes, grown entirely in the open air, 24 feet by 3 feet table-space allowed, Mr. G. MOUNT, Canterbury, won quite easily, adding another triumph to Kentish-grown fruit. The finest examples here were grand piles of Bismarck (extra fine), Cox's Orange Pippin, Peasgood's Nonsuch (large), Worcester Pearmain, and Gascoigne's Scarlet Seedling, with dishes of high-class quality of Lady Sudeley and Royal Jubilee; the entire collection being well-coloured, and the fruit betokening a hardihood most desirable. The 2nd prize in this class was awarded to Mr. HOLWELL, All Saints Road, Sidmouth, this, too, being a first-class exhibit; some very superior examples of Pears were staged here, the finest being Marie Louise (extra fine), Pitmaston Duchess, Souvenir du Congrès, and Doyenné du Comice. The best of the Apples were Annie Elizabeth, Golden Noble, Ecklinville Seedling (of extraordinary size and finish), Peasgood's Nonsuch, Tibbett's Pearmain, Mère de Ménage, Vicar of Beighton, American Mother, Autumn Pearmain, and Tyler's Kernel; other good dishes were Cox's Golden Drop Plum, and Late Orleans, with Brown Turkey Figs. The 3rd prize was awarded to Mr. JOHN BASHAM, Bassaleg, near Newport, Mon., the fruits being of medium size, the best Pears being Williams' Bon Chrétien, Emile d'Huyet, and Beurré d'Amanlis; and the best Apples, Ecklinville Seedling, Lane's Prince Albert and Mrs. Barron.

For a collection of from thirty to thirty-six distinct varieties of Pears in baskets or dishes, grown entirely in the open air, arranged on a table space of 24 ft. by 3 ft., Mr. H. BERWICK, Sidmouth Nurseries, Sidmouth, Devon, was awarded the 1st prize, many of the examples being very fine, notably King Edward (a grand exhibit), Pitmaston Duchess, Gratioli of Jersey, Williams' Bon Chrétien, and Durondeau. No other exhibitor competed in this class.

For a collection of fifty distinct varieties of Apples in baskets or dishes, grown entirely in the open air, arranged in a similar space, Mr. J. B. COLWILL was 1st in a good competition, a central basket of Gascoigne's Scarlet in the centre was very brilliant in colours, the fruits of medium size; others in plates, &c., comprised extra fine fruits of Sandringham, Reinette d'Osnabruck, Bramley's Seedling, Tibbett's Pearmain, Golden Noble, Alfriston, Lady Sudeley, Jubilee, Twenty Ounce, New Hawthornden, Roundway, Magnum Bonum, Lady Henniker and a grand mound of American Mother, the finest in the show.

The second in this class was awarded to Mr. JOHN BASHAM whose exhibit bore too many traces of the use of fish-netting in supporting the fruits, many being very much marked; the best dishes were Tower of Glamis, New Hawthornden, and Stirling Castle. The third prize in the same class was awarded to Messrs. PAUL & SON, of Cheshunt, whose fruits were fine in size but lacking in colour.

For a collection of not fewer than seventy-five nor more than a hundred distinct varieties of Apples and Pears, with other hardy fruits in baskets or dishes, to be grown entirely in the open air, Messrs. BUNYARD & Co., Maidstone, won quite easily, with a grand display of Apples and Pears of remarkable quality and general excellence, both the fruit and the arrangement were in the usual style of this well-known firm. A central grouping of Apples in distinct colours had a good effect. Around this were grand dishes and baskets of high-class fruit. The finest Apples were Gascoigne's Scarlet Seedling (very brilliant), Allington Pippin (extra fine), Ecklinville Seedling, Castle Major, Withington Fillbasket, Gold Medal, Stone's Apple, Duchess of Oldenburg (extra fine), Bismarck, Bramley's Seedling, Cellini Pippin, Mère de Ménage, Pott's Seedling, Cox's Orange Pippin, and Stirling Castle. Of the Pears, the finest dishes were Durondeau, Marguerite Marillat, Doyenné du Comice, Emile d'Huyet, Beurré Mortillet, and Dr. Jules Guyot. Plums, too, were shown well here. Mr. H. BERWICK was 2nd in this class, with a first-class exhibit, which was, however, overweighted by the Maidstone display; his finest dishes were of Apples, Peasgood's Nonsuch, Gravenstein, Autumn Pearmain, Warner's King, and Waltham Abbey Seedling; and of Pears, Grosse Calebasse, Pitmaston Duchess, and Golden Russet. Plums here were also good, and so were the Peaches.

DIVISION III.

OPEN TO MARKET GROWERS ONLY.

These classes can scarcely be said to have brought anything new in design or practice which may be termed improvements upon our ordinary methods. There was the ordinary box, the market sieve, and baskets, and beyond that the only illustration of a package which may be said to surpass the modes at present employed was that from Mr. Basham, Newport, Mon., which is fully described in one of the following classes.

Class 23 was for 12 lb. of Hamburg Grapes in a single layer, arranged in a baby-basket. But one was forthcoming; it contained ten bunches of Grapes, of somewhat poor colour. No exhibitor's name was attached; it is reasonable to conclude the judges did not deem it worthy an award.

Class 24 was for any other variety of Black beside Hamburg, and there were three competitors, the 1st prize going to Messrs. W. E. WELLS, Hattonhurst, Hounslow, who had ten bunches of Gros Colman, finely-coloured, and laid into the basket in so excellent a manner, that the rich silvery bloom was not disturbed. In this case the baby-basket was dropped into a wooden box, just large enough to take it, to indicate how it could be sent a long distance without harm. Mr. J. GORE, Polegate, Sussex, had ten bunches of Gros Maroc, and, unlike Messrs. Wells, each bunch fastened so as to keep them secure. The bunches were good, the berries well-coloured, but no second award was made. Three baskets competed.

There was but one basket of White Grapes in class 25, for 12 lb. of any white variety also in a baby-basket; they were White Muscats, poor in colour and uneven in berry—the conclusion is they were passed over by the judge.

In class 26, for Grapes packed in any other way than a baby-basket, there was but one exhibit from Mr. J. GORE. This was in an ordinary wicker market-basket, and it contained seven bunches of Gros Colmar Grapes, weighing 11½ lb. The basket was lined with tissue paper, and the bunches of Grapes hanging down the sides, were so securely fastened that they would have travelled hundreds of miles without taking harm. The berries were large, and of good colour; it was deservedly awarded a 1st prize.

In class 27, for four varieties of cooking Apples, about 42 lb. nett of each, in baskets or boxes, the 1st prize was awarded to Mr. E. BASHAM, Griffin Gardens, Bassaleg, Newport, Mon. Each basket was oblong in shape, with lids, the baskets 9 inches in depth. Probably the exhibit was intended to show only the method of packing. Each basket contained two layers of Apples in six lines of six Apples each from back to front, with paper-wool. The sorts were Bismarck, Ecklinville, Lane's Prince Albert, and Lord Derby, the fruit very fine. There is a layer of wool at the bottom, then a layer of Apples, one of paper, and a second layer of Apples with paper, and a layer of wood-wool. These baskets travelled many miles by rail, and then from Paddington by road to the Crystal Palace. The cost of the basket is half-a-crown; with fair use weekly, they will last for six years or more, and they are returnable at the rate of sixpence per hundredweight as empties. The 2nd prize went to Mr. A. WYATT, Hatton, Hounslow, who had his fruit in stout ordinary market-sieves, and lined with ordinary blue paper. The fruit was excellent, the varieties, Stone, Stirling Castle, Golden Noble, and Manx's Codlin. A 3rd exhibit was similarly packed.

Class 28 was similar, with the exception that dessert varieties were inserted, and the weight limited to 20 lb. net. Mr. A. WYATT having the usual market wicker sieve, the varieties excellent in all respects, viz., King of Pippins, Duchess Favourite, Cox's Orange Pippin, and Worcester Pearmain. Mr. G. TEBBUTT, Isleworth, had his similarly packed, but the fruit was not of such high quality. Worcester Pearmain was the best. There were three entries.

Class 29 was for a basket or box of 42 lb. of any Cooking Apple, there being six entries. The 1st prize went to Mr. G. TEBBUTT, who had an ordinary market-sieve filled with very fine fruit of Lady Henniker. 2nd, Mr. A. WYATT, who had a very fine lot of Wellingtons in a market-sieve; a box of about eighty fine fruits of Peasgood's Nonsuch from Messrs. CAMPBELL & GETTING, Glewston, Ross, Hereford, found many admirers; the Apples were in two layers in a box 2½ feet by 1 foot 9 inches, packed with soft paper.

Class 30 was for 20 lb. of a dessert Apple in a basket or box, the 1st prize going to W. MCKENZIE BRADLEY, Esq., Leylands, Meopham, Kent, who had very fine Cox's Orange Pippin in an ordinary market sieve. Mr. JAMES JENNER, Roughway, Tonbridge, was 2nd, having very fine Cox's Orange Pippin similarly packed.

Messrs. CAMPBELL & GETTING had a box of fine Ribston Pippin. There were six entries.

Class 31 was for about 42 lb. of any variety of Apple so packed as to show an improved form of packing for market. There was but one exhibit from W. GALPIN, Esq., Horwood,

Wincanton, just an ordinary wooden box, having three layers of Blenheim Orange Apples laid upon each other without any material between, but with a layer of wood-wool on the top. No award was made. The box contained just over 100 apples.

Class 32 for 42 lb. of Apples, showing an improved system of packing, brought no entry.

Class 33 was for two varieties of Pears in two packages of 20 lb. of each. Here again Mr. WYATT took the 1st prize with fine and ripe Williams' Bon Chrétien and Pitmaston Duchess in ordinary market-sieves; Mr. G. TEBBUTT was 2nd with good Williams' and Beurré Bosc, similarly packed. There were three entries.

Class 34 was for Pears, from twenty-four to forty-eight fruits, according to size, of any one choice dessert variety, suitably packed for market. Mr. A. WYATT was 1st with fine, even fruit of Beurré Bosc, thirty fruits being shown in an ordinary wooden box, laid on wood-wool, in a bed of pink paper; Messrs. W. & E. WELLS were 2nd with twenty-four fine fruit of Souvenir du Congrès, similarly packed.

Class 35 was for a basket or box of about 28 lb. of one variety of Plums. Mr. J. DARLING, Ightham, Kent, was 1st with a small, oblong basket of Pond's Seedling, very fine; and Mr. G. TEBBUTT, 2nd, with some fine fruit of Sandall's Plums.

Class 37 was for a basket or box of about 28 lb. of Damsons, Mr. J. DARLING being 1st with very fine Farleigh Prolific; Mr. A. WYATT was 2nd, with the same variety.

Class 38 was for twenty-four fruit of Peaches packed in a suitable box. Mr. J. GORE was placed 1st, with a very fine dish of [what appeared to be] Sea Eagle, each fruit in tissue paper and packed in paper shavings. An extra prize was also recommended, probably on account of the fineness of the fruit. Mr. J. MILLER, gr. to Lord FOLEY, Ruxley Lodge, Esher, was 2nd, with twelve fruits each of Barrington and Yellow Albatross.

Class 39 was for about 20 lb. of Filberts or Cob Nuts, suitably packed. Mr. JAMES JENNER, Tonbridge, was placed 1st with some very fine Kentish Cobs, in a small oblong basket lined with blue paper; Mr. J. DARLING was 2nd with the same variety similarly packed.

The best basket or box of 12 lb. of Tomatoes, shown in Class 40, came from J. GORE, Esq., in two layers in an ordinary handled market basket. The Frome Fruit and Flower Company were 2nd with capital fruit of The Cropper similarly packed.

DIVISION IV.

FRUITS GROWN IN THE OPEN AIR.

There was one exhibit only of twenty-four dishes of Apples distinct, including sixteen cooking and eight dessert varieties. Mr. Geo. Woodward, gr. to ROGER LEIGH, Esq., Barham Court, Maidstone, was the exhibitor, and the dishes were one and all very fine. No conception of an indifferent fruit-year could have been entertained whilst looking at such Apples as the specimens of Belle de Pontoise, Alfriston, Waltham Abbey, Ecklinville Seedling, Mère de Ménage, Stone's, Lord Derby, Bismarck, Tower of Glamis, &c.; or such dessert varieties as Worcester Pearmain, Baumann's Reinette, Washington, Gascoigne's Scarlet Seedling, Ribston, Wealthy, Mother, or Cox's Orange Pippin. Mother and a few others were perhaps smaller than we have seen them from the same garden previously, but the collection was a fine one.

The class for twelve dishes, distinct, eight cooking and four dessert, was won by Mr. B. MILLER, gr. to F. W. HARTUP, Esq., West Farleigh, Maidstone, and a grand lot they were, though perhaps not a great deal finer than those that won 2nd prize for Mr. W. G. PRAGNELL, gr. to J. R. D. W. DIGBY, Esq., Sherborne Castle, Dorset. There was also a fine collection from Geo. CHAMBERS, Esq., Mereworth, Maidstone, who was 3rd, and three exhibitors were unsuccessful, though showing fruit of first-class quality.

Mr. JAMES DAWES, already mentioned as the winner of many prizes, was the best exhibitor in the class for nine dishes of Apples, distinct; six cooking and three dessert. He had Warner's King, Ecklinville Seedling, Lord Suffield, Beauty of Kent, Tyler's Kernel, Hollandbury, Cox's Orange Pippin, Blenheim Orange, and Ribston Pippin of capital quality generally. The 2nd prize collection was a good one from Mr. W. Slogrove, gr. to Mrs. CRAWFORD, Gatton Cottage, Reigate. An exhibit from Mr. T. W. HERBERT, gr. to J. T. CHARLESWORTH, Esq., Nutfield Court, Redhill, Surrey, was 3rd.

In the class for six dishes of cooking Apples, Mr. Geo. Woodward had a capital collection of the following varieties:—Lord Derby, Peasgood's Nonsuch, Emperor Alexander, Belle Dubois, Stone's and Warner's King. Mr. G. LOCH, gr. to B. H. HILL, Esq., Newcombes, Crediton, Devon, was 2nd. This exhibitor had also some fine fruits, but there was a remark in pencil upon the ticket, and apparently made by the judges, "Too highly polished." It is true, they shone wonderfully. There were several unsuccessful exhibitors in the class.

In the class for three dishes of cooking Apples, there were as many as eleven collections, and the 1st prize was awarded to Mr. A. MAXIM, gr. to Col. H. WALPOLE, Heckfield Place, Winchfield, who had Warner's King, Lady Henniker, and another.

DESSERT APPLES.

Nine collections were shown in the class for six dishes of dessert Apples distinct, and Mr. GEO. WOODWARD was 1st, showing really beautiful specimens of Washington, Wealthy, Worcester Pearmain, Ribston Pippin, Cox's Orange Pippin, and American Mother. Mr. B. MILLER showed well for 2nd prize.

The best collection of three dishes of dessert Apples was from Mr. A. PENTNEY, gr. to A. J. HOWARD, Esq., Worton Hall, Isleworth, who had American Mother, Ribston Pippin, and King of Pippins.

There were thirteen exhibits in this class.

DESSERT PEARS.

The best collection of twelve dishes distinct was shown by Mr. GEO. WOODWARD. Some of the finest of these were Duchess d'Angoulême, Doyenné du Comice, Beurré Mortellet, Triomphe de Vienne, Durondeau, and Gansell's Bergamot. A very commendable exhibit won 2nd prize for Mr. W. ALLAN, and the 3rd prize was taken by Mr. W. H. BACON, gr. to Sir MARCUS SAMUEL, Moto Park, Maidstone.

For a collection of nine dishes, distinct, the best exhibitor was Mr. W. G. PRAGNELL, Beurré Diel, Marguerite Marrillat, Pitmaston Duchess, Beurré Bachelier, Beurré Superfin were all good in his exhibit. The 2nd prize was won by Mr. JOHN POWELL, gr. to Col. BRYMER, M.P., Ilington House, Dorchester.

The best six dishes, distinct, were from Mr. G. H. SAGE, gr. to the Marquis of Camden, Bayham Abbey, Lamberhurst. There were ten exhibits in the class, and Mr. W. A. COOK, gr. to Major HENEAGE, V.C., Compton Bassett, Wilts, was 2nd.

Mr. RICHARD EDWARDS, gr. to G. H. FIELD, Esq., Beechy Lees, Otford, Sevenoaks, won 1st prize for three dishes, showing Mme. Treve, Triomphe de Vienne, and Pitmaston Duchess.

There were also classes for three dishes and one dish of cooking Pears.

PEACHES AND NECTARINES.

A very fine display of outdoor Peaches was made, filling one entire table. In the class for three dishes, eleven collections were staged, and not an inferior dish could be found among them. Mr. WOODWARD gained the coveted award with fine Princess of Wales, Nectarine Peach and Sea Eagle; 2nd, Mr. A. MAXIM, gr. to Col. H. WALPOLE, Heckfield Place, Winchfield, with precisely the same varieties; 3rd, Mr. PENTNEY, gr. to A. J. HOWARD, Esq., Isleworth, with fruits, almost equal to the preceeding.

Eighteen exhibitors staged in the single dish class, the 1st prize going to Mr. WYTHES, gr. to the Rt. Hon. EARL PERCY, Syon House, for very fine and highly coloured Sea Eagle.

For three dishes of Nectarines, three exhibitors entered, the 1st prize going to Mr. WOODWARD for excellent Humboldt, Rivers' Orange and Pine-Apple. 2nd, Mr. EARL, gr. to O. GOLDSMID, Esq., Somershill, Tonbridge. Seven single dishes competed, the 1st prize going to green unripe fruit of Victoria.

A fine and ripe dish of Pitmaston Orange, from Bighclere, in this class was apparently overlooked by the judges.

PLUMS.

Class 60, for four dishes of Dessert Plums, brought eleven exhibitors, all staging well. Mr. J. VERT, gr. to Rt. Hon. Lord BRAYBROOKE, Audley End, came 1st with fine Golden Drop, Jeffersons, Cox's Violet and Transparent Gage. 2nd, Mr. W. KING, gr. to J. COLMAN, Esq., Gatton Park, Reigate.

For one dish, not Gages, twenty exhibitors competed, the 1st prize going to Mr. VERT for fine Golden Drop; 2nd, Mr. POPE, gr. to the Rt. Hon. Lord CARNARVON, Highclere, with Jeffersons.

Thirteen competitors staged in class 62, one dish of Gage Plums; 1st, Mr. KING, with very fine River's Transparent Gage; 2nd, Mr. POWELL, with rather green Claude de Bavay.

The class for four dishes of Cooking Plums brought fifteen competitors, all very good. 1st, Mr. POPE, with Victoria, Grand Duke, Monarch, and Pond's Seedling; 2nd, Mr. VERT.

Twenty-three competitors staged in the single dish of Cooking Plums, a very fine lot. 1st, Mr. CAMM, gr. to the Duchess of CLEVELAND, Battle Abbey, with very large white Magnum Bonum; the 2nd prize going to large Pond's Seedling. Prunes and Bullaces brought eight dishes, that do not call for special comment.

DIVISION V.

THE NEW SPECIAL COUNTY PRIZES.

The classes which invited fruit grown only in the open air, with the competition open only to amateurs and gardeners, appeared in the Schedule for the first time, and excited a

great amount of interest. With the exception of Ireland, from which country there was no entry, all the groups of counties sent Apples, and all Pears with the exception of the Midlands and Wales, Kent, the south and western counties, and the home counties, including Gloucester, sent very fine Apples and Pears, the most brilliantly-coloured and finest finished culinary Apples were from Devon. It would perhaps be invidious to particularise, to judge accurately, as to the relative value of these collections, some information is necessary as to the circumstance and conditions under which they were grown, but these were not forthcoming.

In the class open to KENT growers there were three entries of six dishes of Apples, four to be cooking, and two dessert, the 1st prize went to Mr. W. STOWERS, 10, Harold Road, Sittingbourne, whose very finely finished and well coloured examples of Peasgood's Nonsuch, Lane's Prince Albert, Bramley's Seedling, and Emperor Alexander, with Worcester Pearmain and Cox's Orange Pippin, were very fine indeed. Mr. G. H. Sage, gr. to the Marquis of CAMDEN, Bayham Abbey, Lamberhurst, was 2nd with good but not quite so large or so bright fruit as the foregoing; he had of culinary Apples, Peasgood's Nonsuch, Ecklinville, Warner's King, and Lord Derby, with Ribston Pippin and Baumann's Red Reinette.

Mr. PAGE was the only exhibitor of six dishes of Pears, staging a very good lot of fruit, consisting of General Todtleben, Pitmaston Duchess, Doyenné du Comice, Beurré Bachelier, Souvenir du Congrès, and Williams' Bon Chrétien.

In Class 67, open to Surrey, Sussex, Hants, Dorset, Somerset, Devon, and Cornwall, there were eight entries of Apples; but the award in this class must have occasioned a good deal of surprise. The 1st prize was awarded to Mr. William Camm, gr. to Her Grace the Duchess of CLEVELAND, Battle Abbey, Sussex, who had good Stirling Castle, Warner's King, Peasgood's Nonsuch, and Mère de Ménage. With finely-coloured Ribston Pippin and Cox's Orange Pippin, Mr. G. Lock, gr. to B. HILL, Esq., Newcombes, Crediton, Devon, who had magnificently-coloured Peasgood's Nonsuch, large in size, and very symmetrical; splendid Emperor Alexander, also brilliant in colour; Stirling Castle and Warner's King were also very fine. The dessert varieties were Gascoigne's Scarlet Seedling, and Ribston, both brilliant in colour. In respect of this collection, Devon beat Kent for finish in the most unmistakable manner.

There were seven collections of Pears, and here Surrey triumphed. Mr. W. Slogrove, gr. to Mrs. CRAWFORD, Gatton Cottage, Reigate, was 1st, with finely-finished and handsome fruit of Pitmaston Duchess, Fondante de Cocurme, Beurré d'Amanlis, Souvenir du Congrès Beacon, and Louise Bonne of Jersey; Mr. J. Webb, gr. to H. CHADWICK, Esq., Manor House, Horsham, who had very good even fruit of Beurré Diel, Pitmaston Duchess, Marie Louise, Beurré Superfin, Maréchal de la Cour, and Marie Louise.

In Class 68, open to WILTS, GLOUCESTER, OXFORD, BEDS, BERKS, BEDS, HERTS, and MIDDLESEX, there were ten collections of Apples, the 1st prize going to Berks, being won by Mr. F. Turton, gr. to Mrs. G. GARDEN NICOL, Maiden Erlegh, Reading. Mr. Turton had very fine culinary Apples in Peasgood's Nonsuch, Warner's King, Mère de Ménage, and Loddington Seedling; and dessert, Ribston Pippin, and Cox's Orange Pippin; 2nd, Mr. W. J. Empson, gr. to Mrs. WINGFIELD, Amphill House, Amphill, Beds, who had very fine Mère de Ménage and Peasgood's Nonsuch, Stone's and Warner's King, Lady Sudeley, very good, with Worcester Pearmain, rather small, but very bright. There were eight collections of six dishes of Pears, the 1st prize in this instance going to Mr. W. A. Cook, gr. to Major HENEAGE, Compton Bassett, Calne, Wilts, who had fine, clear, bright, even fruit of Williams' Bon Chrétien, Pitmaston Duchess, Doyenné du Comice, brightly coloured Marie Louise, Louise Bonne of Jersey, and small Beurré Diel; 2nd, Mr. R. Chamberlain, gr. to F. M. LONAGAN, Esq., Cressingham Park, Reading, who had Pitmaston Duchess, unusually brown; Doyenné Boussoch, Clapp's Favourite, Williams' Bon Chrétien, Doyenné du Comice, and Fondante de Cocurme.

In the class open to ESSEX, SUFFOLK, NORFOLK, CAMBRIDGE, HUNTS, and RUTLAND, five collections of six dishes of Apples were staged, and here Norfolk came to the fore, the 1st prize going to Mr. J. Bowery, gr. to H. H. HURNARD, Esq., Gurney's Manor, Hingham, Norfolk, who had very fine Warner's King, Loddington Seedling, Bramley Seedling, Peasgood's Nonsuch, with very fine Ribston Pippin and Cox's Orange Pippin; 2nd, Mr. J. C. Tallack, gr. to E. DRESDEN, Esq., Livermere Park, Bury St. Edmunds, who had fine Warner's King, the old Catshead Codlin, Emperor Alexander, Dumelow's Seedling, very fine and bright Ribston Pippin, and rather small Cox's Orange Pippin.

There were but two lots of Pears. Mr. A. Andrews, gr. to the Hon. W. LOTHIAN-CAMPBELL, Campsea Ash, Wickham Market, who had very good Souvenir du Congrès, Pitmaston Duchess, Williams' Bon Chrétien, Doyenné du Comice, Maréchal de la Cour, and Beurré Hardy; 2nd, Mr. J. Nichol, gr. to J. W. MELLE, Esq., Sewardstone Lodge, Seward-

stone, who had smaller fruit but bright, the varieties, Beurré Diel, Pitmaston, Duchess Durondeau, Doyenné du Comice, Rivers' Princess and Beurré Bachelier.

In the class open to LINCOLN, NORTHAMPTON, WARWICK, LEICESTER, NOTTS, DERBY, STAFFORD, SHROPSHIRE, and CHESHIRE, there were three collections of six dishes of Apples; Messrs. LEE & SONS, Contractors, Higher Bebbington, Cheshire, were placed 1st with remarkably good examples of Warner's King, Ecklinville Seedling, Peasgood's Nonsuch, Alfriston Brilliant, Worcester Pearmain, and very fine King of the Pippins, very fine fruit indeed for Cheshire. Mr. W. H. Divers, gr. to His Grace the Duke of RUTLAND K.G., Belvoir Castle, Grantham, who had fine culinary Apples in Gascoigne's Seedling, Stirling Castle, Peasgood's Nonsuch, and Warner's King, all very clean and bright; Cox's Orange Pippin, fair; and Worcester Pearmain, small, bright in colour.

Two collections of Pears only were staged. Mr. THOMAS BENNETT, Shavington Gardens, Market Drayton, with remarkably good, bright, even samples of Pitmaston Duchess, Beurré d'Amanlis, Doyenné du Comice, Williams' Bon Chrétien, Marie Louise, and Louise Bonne of Jersey; 2nd, Mr. W. H. DIVERS, with duller, but good even samples of Williams' Bon Chrétien, Doyenné du Comice, Beurré d'Anjou, Beurré Hardy, Beurré Superfin, and Emile d'Heyst.

Class 71 was open to growers in WORCESTER, HEREFORD, MONMOUTH, GLAMORGAN, CARMARTHEN, and PEMBROKE. There were but two collections of Apples, and no Pears. Mr. RICHARD M. WHITING, Credenhill, Hereford, was 1st with six dishes of Apples, having richly-coloured and even Peasgood's Nonsuch, fine Lord Derby, grand Bramley's Seedling, Stirling Castle, with medium-sized, bright-coloured Cox's Orange Pearmain, and Worcester Pearmain. 2nd, R. E. BATEMAN, Esq., Mount Villa, Rylands Road, Leominster, who had good Peasgood's Nonsuch, Beauty of Kent, bright Queen Caroline, Bismarck, Gascoigne's Scarlet Seedling, and Cox's Orange Pippin.

Class 72 was for other counties in WALES, and here there were but two collections of Apples, and both in size and brightness they fell much behind anything previously shown in this division. Mr. G. J. SQUIBBS, gr. to the Dowager Lady W. WYNN, Llangedwyn, Denbighshire, who had Lord Suffield, Tower of Glamis, Gloria Mundi, Mère de Ménage, with Ribston Pippin and Cox's Orange Pippin, both relatively better than the culinary varieties. Mr. H. Austin, gr. to L. P. PUGH, Esq., Abermaide, Aberystwith, was 2nd. He had Maston Seedling and Winter Hawthornden as his best culinary varieties, and King of the Pippins.

There were two collections of Pears from this group of counties, and they were better than the Apples; though small, they were clean and bright. Mr. J. SQUIBBS was again 1st, with Beurré Rance, Beurré Diel, Doyenné du Comice, Williams' Bon Chrétien, Fondante d'Automne, Marie Louise; 2nd, Mr. H. AUSTIN, with Pitmaston Duchess, Flemish Beauty, Beurré Clargéau as his best.

Class 73 was open to growers in the six northern counties of England and the Isle of Man, and here, as might be expected, the produce was small. There were two collections of six dishes of Apples, the 1st prize going to Mr. W. J. Jeffrey, gr. to the Earl of HAREWOOD, Harewood House, Leeds, who had good Lord Suffield, Alfriston, Stirling Castle, Potts' Seedling, with Worcester Pearmain and Cox's Orange Pippin, small. Mr. R. J. HIRD, Roslea, Formby, near Liverpool, was 2nd, his best dishes were Lord Suffield, Warner's King, Lord Derby, and Waltham Abbey Seedling.

SCOTLAND

Sent but one collection of six dishes of Apples in class 74, but they were clean, bright, of good size, and well coloured. The 1st prize was deservedly awarded to Mr. W. J. Day, gr. to the Earl of GALLOWAY, Galloway House, Garliestown, who had Warner's King, Peasgood's Nonsuch, The Queen, Stone's, or Loddington, with James Grieve and Worcester Pearmain, both very bright and even. There was but one collection of six dishes of Pears, a very good lot indeed, consisting of Doyenné Boussoch, Pitmaston Duchess, Madame Troyve, Williams' Bon Chrétien, very good Jersey Gratioli and Louise Bonne of Jersey.

There was nothing whatever from Ireland.

DIVISION VI.

SINGLE DISH CLASSES. DESSERT APPLES.

These began with Adams' Pearmain, which had eight dishes the best, singularly pretty samples coming from Mr. P. Locke, gr. to B. H. HILL, Esq., Crediton. They were, however, not large. Allen's Everlasting was a poor lot, and does not seem worth scheduling. Allington Pippin was better, there being seven dishes, Mr. WOODWARD, of Barham Court, being 1st, and Mr. J. POWELL, gr. to Col. BRYMER, Dorchester, being 2nd. Baumann's Red Reinette, with nine dishes, made a rich-coloured show, Mr. WOODWARD again having the best. There were sixteen dishes of the famous Blenheim Orange, some exceptionally good, such as were the samples from Mr. SLADE, gr. to Lord POLTIMORE, Exeter, and Mr. WHITING,

Hereford, who came 1st and 2nd. There were but six dishes of Brownlee's Russet. Mr. G. CHAMBERS, Mereworth, Kent, having the best of Claygate Pearmain. Mr. Whiting was first, with such good samples that they might have passed for Ribston Pippins. Cockle Pippin was not in great force, but the finest dish, which was from Barham Court, was not in favour, smaller, rather more highly coloured fruits, being preferred. There were some capital samples of Court Pendu Plat, the best coming from Mr. J. C. TALLACK, gr. to E. DRESDEN, Esq., Livermere Park, Suffolk. Mr. J. Vert, gr. to Lord BRAYBROOK, Audley End, Essex, being 2nd, with good samples. Such a popular variety as Cox's Orange Pippin brought twenty-five dishes, Mr. King, gr. to J. COLMAN, Esq., Gatton Park, Reigate, being 1st, with beautiful fruit, Mr. WOODWARD running him hard for 2nd place. This variety merits more prizes. Duke of Devonshire, a flattish russety fruit, brought Mr. G. H. Sage, gr. to Marquis CAMDEN, Lamberhurst, Kent, to the front, with a nice dish; and with the little-shown Egremont Russet, Mr. Earl, gr. to D. E. AVINGDON GOLDSMID, Tonbridge, was 1st. Fearn's Pippin, generally rather small, gave the 1st to Mr. STOWERS, Sittingbourne, with fair samples. Gascoigne's Scarlet had several dishes of absurdly large samples for dessert purpose, and were quite out of place in this section. The best—very fine and richly coloured—came from Mr. STOWERS; Mr. LOCK coming a close 2nd. Of James Grieve only two dishes were shown; King of the Pippins made a moderate show, only nine dishes being staged, Mr. CHAMBERS having the best. There were but four lots of King of Tomkin's County, one of these being of doubtful form. Mr. WOODWARD's sample was very fine, but lacking the high colour usually seen on this variety. There were eight dishes of Mannington Pearmain of moderate quality. The old Margil was better represented, Mr. WOODWARD having the best, and Mr. SLADE the 2nd best dishes. American Mother Apple from Barham Court was the best in its class. There were sixteen dishes of Ribston Pippins, all very good, some specially so. Mr. HALL was placed first, and Mr. CHOPPING, Sittingbourne, 2nd. Scarlet Nonpareil was poor, but Worcester Pearmain gave grand colour, and was first-rate. Singularly beautiful were the samples staged by Mr. KING, from Reigate; Mr. WOODWARD coming 2nd. Twenty-one lots of any other varieties were shown, a singularly beautiful sample of Mabbott's Pearmain coming 1st, and the golden russety variety, St. Edmund Pippin, 2nd. Other good varieties were Wealthy and Scarlet Pearmain.

KITCHEN APPLES

Started with Alfriston, the best samples coming from Mr. WOODWARD, and Mr. J. HUDSON, Gunnersbury. With Beauty of Herts, capital samples, Mr. WOODWARD was again 1st, being close run by Mr. C. HERRIN, of Dropmore, 2nd.

Bismarck: the samples generally fine, yet showed some fungus under the skins. The best came from Mr. SWEET, whose samples were excellent. Bramley's Seedling, a broad, flat, and deeply-indented Apple, cutting much to waste, had through the kindness of Messrs. MERRYWEATHER & Co., Nottingham, three prizes; the samples generally were large. Out of eighteen lots, Mr. STOWERS was placed 1st, Mr. C. MOSS, Welford Park, Newbury, was second, Mr. BEVERLEY, Westbury-on-Trym, coming 3rd. Cellini Pippin was in moderate form, but Cox's Pomona, another ungainly fruit, was represented by fourteen dishes, Messrs. WOODWARD and POWELL having the best.

There were ten dishes of Dumelow's Seedling, or Wellington, the best coming from Mr. CHAMBERS, Mr. W. H. GODDEN being 2nd. Ecklinville Seedling was very fine generally, Mr. WOODWARD and Mr. B. MILLER, gr. to F. W. STARTUP, Esq., Maidstone, taking the prizes. The samples of Emperor Alexander from Barham Court were superb, the rest poor. With Frogmore Prolific, Mr. TURTON, Maiden Erlegh, Reading, was 1st, having capital samples, whilst the finest Golden Noble came from Mr. WOODWARD, who also had very handsome and large Golden Spire. Grenadier was not largely shown, the best coming from Mr. B. MILLER; whilst Mr. WOODWARD was again 1st with grand samples of New Hawthornden. That superb late Apple, Lane's Prince Albert, was well shown. Mr. E. CHOPPING had the finest. Mr. H. C. PRINSEP, Buxted Park, Uckfield, coming 2nd with handsome samples of a more conical form. There were fifteen lots of the fine Lord Derby, those from Barham Court being well 1st, and a very handsome sample from Mr. BASILL, Weybridge, coming 2nd.

Lord Grosvenor was poorly represented, but there were eleven lots, generally very good, of Lord Suffield, Mr. W. G. FRAGELL having the best; Mr. W. LEWIS, gr. to P. OLIVERSON, Esq., Maidstone, being 2nd. Mère de Ménage brought grand fruits, richly coloured, Messrs. WOODWARD and SLADE coming 1st and 2nd. New Northern Greening was poor, but Newton Wonder was better; Messrs. J. R. PEARSON & SONS, Chilwell, Notts, offering three prizes in this class. The best dish came from Mr. THOMAS, Polegate, Sussex. Peasgood's Nonsuch was very fine, the fruit from Barham Court

being exceptionally fine; Mr. LEWIS coming 2nd also with finesamples. Potts' Seedling was but moderately represented. Mr. C. ROSS had the best Sandringham; Mr. WOODWARD, the finest Royal Jubilee and Spencer's Favourite, whilst Mr. ROSS was 1st for Stirling Castle, as also with Stone's Pippin; a very fine dish from Barham Court being oddly overlooked. Many beautiful samples of The Queen were shown. Mr. WOODWARD and Mr. MILLER taking the prizes, whilst the former and Mr. Howard, gr. to Sir M. SUTTON, Beenham Park, Newbury, had the finest Tower of Glamis. Warner's King was represented by 14 dishes, Mr. WOODWARD having the best; he was 1st in the class for any other variety of Cooking Apple with superb Belle Dubois, the 2nd dish being Dutch Codlin.

DESSERT PEARS.

These were necessarily much less attractive than the Apples, and generally competition was smaller, telling too plainly the nature of the season. There was but one dish of Beurré Bosé, and but four of Beurré d'Anjou, the best coming from Mr. G. H. SAGE. Messrs. W. G. PRAGNELL, and C. WYTHES, Syon House, Brentford, had the best Beurré Diel. Mr. WOODWARD took 1st place with good dishes of Beurré Hardy, fruits well coloured, as also with Beurré Superfin. Comte de Lamy was fair, but Conference much better, capital samples coming from Barham Court and from Mr. THOMAS, Doyenné du Comice was but moderately shown, the best coming from Colonel BRYMER, whilst Mr. WOODWARD staged the 1st prize Emile d'Heyst and Fondante d'Thirot. Mr. PRINSEP was 1st with good Fondante d'Automne; Josephine de Malines was in moderate form, and Le Lectier brought but two dishes, the best coming from Mr. W. JONES, Carshalton. There were but seven dishes of Louise Bonne of Jersey, the best coming from Mr. W. CAMM, gr. to the Dowager Duchess of CLEVELAND, Battle Abbey. Mr. WOODWARD had the best Madame Treyve.

There were but five baskets of Marie Louise, Mr. W. ALLAN, Gunton Park, having the finest; he was also 1st in a larger competition with Marie Louise d'Uccle. The best Marguerite Marillat came from Barham Court, and out of nineteen dishes, Mr. LOCK had the finest Pitmaston Duchess; whilst samples generally were good, all the fruits were more than usually russety. Seckle was small, Mr. PRINSEP having the best. Souvenir du Congrès was very fine; Mr. C. HERRIN having the best, and Mr. A. COLEMAN, Stinchcombe, Dursley, was 2nd. Thompson and Winter Nelis were in poor form. Finally in the class for any other dessert varieties, Mr. WOODWARD was 1st with very fine Triomphe de Vienne, Clapp's Favourite coming 2nd out of twenty dishes. Several classes in this section had either no representatives to note, or but one dish or so.

NON-COMPETITIVE EXHIBITS.

Messrs. J. VEITCH & SONS, Ltd., Royal Exotic Nursery, Chelsea, contributed an extensive exhibit, comprising 100 dishes of Apples, and the same number of Pears, also some well-fruited trees in pots of Pears and Figs, the whole covering a table of considerable size. Many of the principal varieties of Apples were set up in boxes, of about thirty to forty fruits in each. Conspicuous among the Apples were Peasgood's Nonsuch (very fine), and Lord Derby.

Of Pears, five baskets were shown of Pitmaston Duchess, Beurré Fonqueray, Souvenir du Congrès, Williams' Bon Chrétien, Charles Ernest (new), Gratioli of Jersey. Very showy also in this exhibit were boxes of the John Downie and Dartmouth Crabs, fruiting sprays of Rubus laciniatus, the best of the Blackberries and plants in pots (60's) of the Strawberry St. Joseph, a perpetual bearing variety, carrying some nice fruits. In the centre of this stand a collection of Gourds were a source of attraction. The Hogg Medal was awarded this exhibit.

Messrs. J. CHEAL & SONS, Crawley, set up a large table, artistically arranged, of Apples and Pears, with a few fruiting-trees of Apples, interspersed with stands of cut Dahlias. In this exhibit a large stand of Bismarck Apple was noticeable, also Jubilee and Lord Grosvenor, and also some fine dishes of Pears (Silver Knightian Medal).

Messrs. J. PEED & SONS, Roupell Park Nursery, S.E., set up some handsome baskets of Apples. A feature of this stand was the four Vines in pots trained from the four corners (Silver Knightian Medal).

From Messrs. SPOONER & SONS, Hounslow Nurseries, Middlesex, came a varied collection of Apples and Pears, 150 dishes (Silver Banksian Medal).

The HORTICULTURAL COLLEGE, Swanley, Kent, contributed an interesting exhibit of bottled fruits, and several dishes of Apples, Nuts, and Plums (Silver Banksian Medal).

Messrs. T. RIVERS & SON, Sawbridgeworth, set up a second stand, in which were some marvellous examples of Peasgood's Nonsuch, Ribston Pippin, and Cox's Orange Pippin Apples; Pitmaston Duchess and Souvenir du Congrès Pears; Monarch, Admiral, Grand Duke, and Golden Transparent Plums; Sea Eagle and Princess of Wales Peaches; Gros Maroc

and Alicante Grapes, with pot trees in fruit of Pears and Plums as a central relief, a very fine exhibit. A Hogg Medal was awarded this exhibit.

Messrs. J. LAING & SONS, Forest Hill, arranged a table with a huge pyramid of Apples as a central piece. Notable dishes in this exhibit were among Apples, Bismarck, Peasgood's Nonsuch, Ecklinville Seedling, Alfriston, Emperor Alexander, Worcester Pearmain, Lord Suffield, Prince Albert, and Bramley's Seedling.

Well fruited Apples and Pears in pots were also contributed, and with handsome dishes of Pears, including Pitmaston Duchess, Beurré Superfin, Doyenné Boussoch, Brockworth Park, and Williams' Bon Chrétien, an admirably arranged exhibit (Silver Knightian Medal).

Mr. R. C. NOTCUTT, Wood's Nursery, Woodbridge, sent 50 dishes of Apples and Pears (Silver Banksian Medal).

From the Lady Dowager WILLIAMS-WYNN came 43 varieties of Apples, and 27 varieties of Pears from Cordon trees, all of moderate quality (Silver Banksian Medal).

Messrs. WM. CUTHRUSH & SON, Highgate Nurseries, staged sixty dishes of Apples arranged in combination with circular groups of Carnations, Bouvardias, and Begonia Gloire de Lorraine.

Messrs. SUTTON & SONS sent sixteen varieties of Tomatos grown and ripened in the open air, nice baskets each filled with a distinct variety. Notable were Perfection, Best of All, Earliest of All A1., among red, Sunbeam, Prince of Wales, and Golden Nugget; among yellows, Peach Blow, and Tender-and-True, a distinct type similar to the Peach in colour (Silver Knightian Medal).

Mr. W. HORNE, fruit-grower, Rochester, Kent, sent twenty-five dishes of fruit (Bronze Banksian Medal).

Mr. W. TAYLER, Hampton, twenty dishes of Apples (Bronze Banksian Medal).

Messrs. J. VEITCH & SONS also contributed an imposing bank of Bamboos.

Messrs. J. LAING & SONS arranged by the orchestra a miscellaneous group of plants, including Begonias, Palms, interspersed with a few choice Orchids.

Messrs. H. CANNELL & SONS staged some fifty varieties of Cannas, a very showy group, that proved very attractive to visitors.

Messrs. T. S. WARE, Ltd., staged a handsome group of cut Dahlias and double Begonias, lightly arranged with foliage plants.

A very interesting exhibit was staged by Mr. Beckett, gr. to Lord ALDENHAM, Elstree, which comprised fruiting sprays of eighteen varieties of Ricinus.

BRITISH MYCOLOGICAL IN DUBLIN, 1898.

THE second annual meeting of this Society has been recently held in Dublin. It may be characterised as having been a week of hospitality and hard work. So eager were some of the members to see what Ireland could produce in the way of fungi that the Secretary, Mr. Rea, Mr. Rose, Mr. Stretton, and the acting President, appeared in Dublin three days before the advertised time. They were met on their arrival by the local secretary, Dr. T. Johnson, and by the veteran Irish mycologist, Mr. Greenwood Pim. On the following day the Yorkshire contingent arrived, Messrs. Crossland, Soppitt, Clarke, and Bearstow, followed shortly after by Mr. G. C. Hughes, of Chesterton, and Dr. Peacock of Malvern. Monday, September 17, saw the party en route for Howth, an estate on which the front door of the mansion always stands open. Legend has it that in bygone days one of the native queens needed hospitality, which being refused, the heir of the house was carried off; since then the front door has stood open. A ramble in a damp glen was soon rewarded by finding Hydnum, udum, a tuber, probably Hydnotria Tulasnei, but it was not quite mature; Cynophallus caninus, Naucoria erinaceus, a group of magnificent specimens of Lepiota acutesquamuosa, gave the mycologists an indication of what the Irish woods could produce.

In the evening a meeting was held in the Botanical Laboratory of the Royal College of Science, where the work of naming the specimens was begun in good earnest, microscopes and text-books being in considerable demand. Mr. Swann exhibited a magnificent series of photographs of the Saprolegnia; Mr. Greenwood Pim showed some specimens and photographs, and Dr. McWeeney exhibited various cultures of fungi. It was, in fact, a general réunion of kindred spirits. The last words the present writer heard that evening were those of certain enthusiasts trying to make arrangements for getting to work at 6 A.M. next day.

On Tuesday, the 20th, the party, now augmented by the members of the Dublin Naturalists' Society, started off under the guidance of Dr. Johnson, in search of Gyrodon rubellus, which Mr. McQueeny had found some few years previously. The spot was found, but not the fungus. The party, however, saw some waterfalls instead, and had a pleasant drive of eighteen or twenty miles through a lovely country. A few stopped behind, and examined the ravages caused by Poly-

porus fomentarius upon some splendid Beech-trees. It was interesting to compare the effect of P. fomentarius on Beech with what we saw last year at Workshop of P. sulphureus on Oak. P. sulphureus gets into a tree, and destroys the middle of the trunk, leaving it sound outside. P. fomentarius seems to vent its energies in destroying the exterior of the tree, fine trunks having a third or a quarter of their circumference killed from the ground upwards from 10 to 15 or 20 feet. Numerous specimens of the Polyporus were in situ, some of which Mr. Clarke, of Halifax, photographed. The rare Polyporus Wynnei was also found, as well as the beautiful Marasmius Hudsoni.

A good company dined in the evening at Russell's Hotel, and adjoining to the large theatre of the Royal College of Science, the chair being taken by Mr. R. L. Praeger, the President of the Dublin Naturalists' Field Club. The regrettable absence of the President of the British Mycological Society, Mr. G. Massee, tended to damp the whole proceedings—we missed his lively footsteps, his whimsical sayings, and his facile determination of fungi species. It fell to the lot of the writer to take his place, which he did to the best of his ability; but, after all, he was only a *locum tenens*, and although the society did him the honour of electing him their President for the ensuing year, yet he felt that after all he was but a poor substitute for the "rare original." Not only was his presidential address dry, but some of the audience said the seats were so uncomfortable that they could not "drop off," as is the custom during presidential addresses.

Wednesday morning was spent in working at the herbarium, in opening consignments of fungi which now came to hand from all parts of Ireland, and from some parts of England as well. The afternoon excursion to Brackenstown, near Swords, was nearly marred by the overturning of an outside car, on which Mr. and Mrs. Rea, Mr. Pim, and the Rev. H. W. Lett. For the moment the sight was positively sickening, to see one's friends shot in a heap on the ground, with the car coming over upon the top of them, but fortunately they escaped with a few bruises. The Rev. W. L. W. Eyre and Miss Eyre, from Hampshire, joined the party. As soon as the grounds were entered the rain began to come down at first gently, then steadily, then heavily. But it made no difference to the workers—for as the Secretary put it, "I am wet through, so we will just go on." Sphaeria mammiformis, Agaricus pisciodorus, Polyporus obducens and vitiosus, were our rewards. At the evening meeting Mr. Wagers' paper was read, as well as Mr. Crossland's communication on "The Mycological Flora of a Discarded Hearth-rug."

Thursday was spent in the grand Woods of Avoca, some of the party walked to see the "meeting of the waters," eulogised by Moore; others did not, contenting themselves with finding Boletus parasiticus, Russula lepida, Agaricus jubatus and pantherinus, and Helotium ceruginosum in magnificent fruit. Owing to the exertions of the Secretary, the train was "held for a minute or two" at one of the minor stations to enable us to have five o'clock tea. In the evening more papers, including an "Epitome of Eriksson's Researches on the Cereal Rusts" [which will be given in our next issue. Ed.]

Friday morning was devoted to work in the museum; the afternoon to an excursion to Lucan, where the find of the day fell to Dr. Peacock, of Malvern, in Agaricus strobiliformis. Mr. Soppitt also picked up Cortinarius fulgens, new to Ireland. The tired fungologists were refreshed by afternoon tea through the considerate kindness of Miss Hopkins, of Lucan. In the evening, Dr. E. J. McWeeney read a paper on the "Sclerotium Disease of Potatoes"—a malady which, he said, was very widespread in certain districts, especially along the western and north-western seaboard of Ireland. This disease assumed two distinct forms—one characterised by large sclerotia hanging loosely in the pith-cavity of the affected Potato-plant—the other by small crumpled inconspicuous sclerotia firmly adherent to the epidermis of the leaves and stem. On planting the sclerotia belonging to the first-named species, they gave rise to one or several upright stalks, each supporting a small brown Peziza. This was usually about the size of a threepenny-piece. If planted on a Potato, the spores gave rise to threads which penetrated into the plant, and produced after awhile tuft-like masses of mycelium, the central part of which became hard and black—in other words, became a sclerotium. The affected plants soon die. The smaller variety of sclerotium when planted produces not a Peziza, but a mouse-grey Botrytis. This mould seems to be capable of attacking living Potato plants. After killing them it produces its minute sclerotia on their withering stems and leaves. It never develops into a Peziza, nor does the other Peziza-producing sclerotium ever produce a Botrytis. By these studies, mostly carried on in the laboratory at the Albert Model Farm, he had succeeded in demonstrating the existence of two separate diseases of the Potato—both characterised by sclerotia, and both eminently preventible. The proper course to take was to carefully destroy by fire the withered remains of the Potato crop each autumn, and not to grow Potatoes on the same plot for several consecutive seasons. Deep cultivation also, with a view to burying the sclerotia out of harm's way, was advisable. He concluded by saying, that though neither of these diseases was so much to be dreaded as the Phytophthora, yet in certain districts they did a great deal of damage to the crop.

Mr. Greenwood Pim exhibited some lantern-slides of fungi, which were greatly admired. Mr. Soppitt made a communication on the Gooseberry Ecidium, a much commoner disease in Ireland than in England. The life-history of this fungus he has been working at for some years. Mr. Rea read a paper on the "Different Names applied by English and French mycologists to one and the same Basidiomycete."

The Saturday excursion was to be to Dunragh, where Mr. Paterson had found Boletus porphyrosporus, but the writer was unable to take part in this.

And so ended our happy week. Our welcome was hearty, our entertainment perfect; every minute detail affecting our comfort was looked after by Dr. Johnson and his colleagues, but in return we had to work. Charles B. Poyright, M.D.

MARKETS.

COVENT GARDEN, SEPTEMBER 29.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms	3 0-4 0	Mignonette, per 12	
Carnations, pr. doz.		bunches ...	2 0-4 0
blooms ...	1 0-2 0	Orchids:—	
Chrysanthemums,		Cattleya, 12 bms.	5 0-8 0
white, 12 blooms	1 0-3 0	Odontoglossum	
Chrysanthemums,		crispum, 12 bms.	2 0-4 0
yellow, 12 blooms	1 0-3 0	Pelargoniums, scar-	
Eucharis, per dozen	3 0-4 0	let, per 12 bun.	4 0-6 0
Gardenias, per doz.		— per 12 sprays ...	0 4-0 6
blooms ...	1 0-2 0	Roses, Tea, per doz.	0 6-1 0
Gladioli, white, doz.		— yellow (Pearls),	
sprays ...	0 8-1 0	per dozen ...	1 0-2 0
Lilium Harris, per		— pink, per dozen	1 6-2 0
dozen blooms ...	3 0-4 0	— Safrano, p. doz.	1 0-2 0
Lily of the Valley,		— red, per dozen	0 6-1 0
dozen sprays ...	1 0-2 0	Stephanotis, doz.	
Maidenhair Fern,		sprays ...	1 0-1 6
per 12 bunches ...	4 0-8 0	Tuberose, 12 blms.	0 3-0 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	4 0-12 0	Ferns, small, per	
Aspidistras, p. doz.	12 0-30 0	dozen ...	1 0-2 0
— specimen, each	5 0-15 0	— various, p. doz.	5 0-12 0
Asters, p. doz. pots	4 0-5 0	Ficus elastica, each	1 0-7 6
Chrysanthemums,		Foliage plants, per	
various, per doz.	9 0-24 0	dozen ...	12 0-36 0
Dracenas, each ...	1 0-7 6	Liliums, various,	
— various, p. doz.	12 0-24 0	per dozen ...	12 0-30 0
Ericas, per dozen ...	12 0-21 0	Marguerites, p. doz.	6 0-12 0
Evergreen shrubs,		Palms, various, ea.	2 0-10 0
in variety, p. doz.	6 0-24 0	— specimens, ea.	10 6-84 0

FRUIT.—AVERAGE WHOLESALE PRICES.

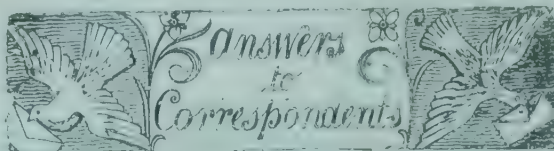
	s. d. s. d.		s. d. s. d.
Apples, Duchess Fa-		Melons, each ...	0 6-1 3
vourite, sieve ...	4 0 —	Nectarines, doz. ...	8 0-12 0
— King's, p. sieve	3 0 —	— second quality	2 0-4 0
— Ingestres, sieve	3 6 —	Oranges, Austr-	
— Blenheim, per		lian, cases ...	10 0-11 0
sieve ...	3 0 —	— Canary, cases ...	7 6 —
— Ribstons, sieve	4 0 —	— Californian,	
— Ferns, p. bush.	6 0 —	cases ...	12 6-18 0
— Large Cookers,		Peaches, per doz.	
per bushel ...	4 0-6 0	(according to	
— Nova Scotia,		size) ...	8 0-12 0
Gravensteins,		— Second quality	4 0-6 0
per barrel ...	17 6 —	Pears, Eng., Hazels,	
— Ribstons, p.		sieve ...	3 0-3 6
barrel ...	22 6 —	— Williams, do.	4 0-8 0
Bananas, bunch ...	8 0-12 0	— foreign, Wil-	
Blackberries, pecks	2 0 —	liams, in French	
— sieves ...	3 0-3 6	crates ...	20 0-21 0
Cobnuts, per 100		— Louise Bonne ...	9 0-16 0
lb. ...	45 0-50 0	— Duchess ...	11 0-14 0
Damsons, sieve ...	2 3-3 0	Plums, Bush, per	
Figs, per dozen ...	1 0-1 6	sieve ...	2 0 —
— Italian, boxes ...	2 3 —	— Californian,	
Filberts, per 100 lb.	30 0-40 0	Golden Drop,	
Grapes, English,		cases (about	
Alicante ...	0 9-1 3	18 lb.) ...	10 6 —
— Gros Colmar ...	1 0-1 6	— Pond's Seedling	5 0-6 0
— Hamburgh, lb.	1 0 —	— Prunes, sieve ...	3 0-3 6
— second quality	0 8-0 10	— Switzens, sieve	2 0 —
— Channel Isles,		Walnuts, English,	
per lb. ...	0 6-0 9	per bushel ...	3 6 —
— Muscats, per lb.	1 6-2 6	— Dutch, shelled,	
— 2nd quality ...	1 0-1 3	per peck ...	3 0-5 6

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Lettuce, Cos, doz.	2 0-2 6
per doz. ...	3 0-4 0	Marrows, Vege-	
Beans, Eng., Dwarf,		table, per dozen	2 0-3 0
per sieve ...	4 0 —	— per pot ...	6 0 —
— Runners, in bus.		Mint, per dozen	
Beetroots, new, per		bunches ...	2 0-3 0
dozen bunches	3 0-4 0	Mushrooms, house,	
— p. tally of 60 ...	2 6-4 0	per lb. ...	1 6 —
Brussels Sprouts,		Onions, Dutch,	
per sieve ...	3 0-3 6	bag ...	3 6 —
Cabbage, doz. ...	1 0-2 0	— green, per doz.	
— Collards, open,		bunches ...	1 6 —
per tally ...	4 0 —	— Valencia and	
— Yorks, tally ...	8 0-10 0	Oporto, cases ...	5 6 —
Cauliflowers, Eng-		— Picklers, in bags	2 0-3 6
lish, per dozen	1 6-2 6	— in sieve ...	1 6-2 0
— per tally ...	7 0-8 0	Parsley, per dozen	2 0 —
Cress, doz. punnets	1 6 —	— sieve ...	1 0 —
Carrots, bunches,		Potatoes, Hebrons,	
per dozen ...	1 0-1 6	Snowdrops, Up-	
— washed, in bags	3 6 —	to-Date, &c. ...	55 0-90 0
— Surrey, bunches,	3 0-4 0	Radishes, Round,	
Celery, now, bundle	1 0 —	breakfast, per	
— White ...	1 0 —	dozen bunches	
— Red ...	0 10-1 0	(home grown) ...	1 3-1 6
Cucumbers, p. doz.	1 6-3 0	Salad, small, pun-	
Endive, English, p.		nets, per dozen	1 3 —
score ...	1 6 —	Shallots, good, cwt.	8 0 10 0
— French, per		Spinach, per sieve	2 0-2 6
dozen ...	1 6 —	Tomatos, English,	
— English, Bata-		per lb. ...	0 2-0 3
vian, score ...	1 6-2 0	— Belgian, cases,	
Garlic, Eng., per lb.	0 2 —	good ...	1 0-1 3
Horseradish, New		— Channel Isles,	
English, bundle	2 0-2 6	per lb. ...	0 2 —
— foreign ...	1 3-1 6	Turnips, Eng., per	
— English, loose,		dozen ...	2 6-4 0
doz. ...	2 0 —	— in bags, good ...	3 0-3 6
Leeks, doz. bunch.	2 0 —	Watercress, p. doz.	
Lettuce, French		bunches ...	0 3-0 6
Cab., doz. ...	1 3-1 6		

POTATOES.

60s. to 85s. per ton. John Bath, 32 and 34, Wellington Street, Covent Garden.



CAULIFLOWER: A Long Subscriber. We do not know that the variety is more prone to "sport" than others.

CHRYSANTHEMUM: T. D., De B. C., C. H. Snook, and Others. The leaves are affected with the Chrysanthemum-rust. Burn the affected plants, and syringe the others with sulphide of potassium, $\frac{1}{2}$ oz. to a gallon of water.

CHRYSANTHEMUMS DISEASED: Amateur. The leaves sent are attacked by a leaf-spot disease due to a fungus. A similar case was dealt with in this column on May 7, 1898. Fungicides, such as sulphide of potassium or weak Bordeaux Mixture, will probably be useful as remedies, but we cannot say yet what results have followed this treatment. As one variety only is affected, it indicates unhealthy cuttings, or the variety is one that is more susceptible than others to the attacks of fungus.

FERN: X. We cannot tell you where you may purchase a herbarium. You had better advertise.

FLORIDA BEAN: G. This has been identified by Mr. F. Manson Bailey as *Mucuna pruriens* var. *utilis*. It is not likely to be of any use here, but may be serviceable in some of our colonies.

GRAPES SPOILED: W. S. A. The fruit is attacked by the fungus *Gloeosporium laticolor*, which causes the so-called "spot" disease in Grapes and other fruits. There is no known cure. It has been frequently noticed in these pages.

MAGGOTS IN GARDEN: M. W. M. We do not know what particular maggot your garden is infested with, but a capital means of ridding the soil of a number of such pests is to encourage the starling and other insect-eating birds. Frequently fork over the ground, and give the birds a chance by exposing the insects. You might also give the land a dressing with gas-lime in autumn, but do not crop land so treated until spring.

MOSSY LAWN: C. G. P. If the mossiness of the turf is due to the presence of an excessive quantity of moisture in the land, you must drain it with rubble-drains, laid 3 feet deep; if it be due to over-much shade from trees, perhaps something may be done by thinning the trees or the heads, and thus letting in the sunshine. In any case, with a closely-set iron rake scratch up all of the moss possible; then prick up the surface a little, and lay down a thin layer of heavy loam, and sow lawn grass-seeds, together with a little seed of *Trifolium minus* and *T. repens*. It will soon grow with the warmth at the present time in the soil, especially if you apply water several times, if heavy rain should not fall. The less mossy patches may be sown with Grass and *Trifolium*, sprinkling loam and woodashes, the latter forming one-eighth of the whole. Indeed, the entire lawn would be the better for a dressing of the same.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—G. Dixon. Apple, Crimson Queen; Pear, not known.—W. Burgess. Apple New Hawthornden. G. S. 1, Reinette du Canada; 2, Gloria Mundi; 3, Minshall Crab; 4, Golden Noble; 5, Annie Elizabeth; 6, Dumelow's Seedling.—R. Kennard. 1, Worcester Pearmain; 2, Scarlet Nonpareil; 3, not known; 4, King of the Pippins; 5, 6, Reinette de Caux.—R. J. B., Taunton. You have greatly exceeded the number we undertake to name at any one time. You might send a contribution to one or other of the gardening charities. On future occasions send six varieties only. 1, Rosemary Russet; 2, Beauty of Kent; 3, Hawthornden; 4, King of the Pippins; 5, Emperor Alexander; 6, Ribston Pippin; 7, Dumelow's Seedling; 8, New Rock Pippin; 9, Court Pendu Plat; 10, Ribston Pippin; 11, Waltham Abbey

Seedling.—J. B. & Sons. Northern Greening.—Kent. 2, Ecklinville Seedling; 1 and 3, Golden Noble; 4, Gloria Mundi; 5, Worcester Pearmain.—T. H. Lay. 1, Easter Beurré; 2, Marie Louise; 3, Bergamotte d'Esperen. Apple not known, worthless.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—W. L. Disandra prostrata.—R. F. G. 1, not recognised, no flowers; 2, Planera Richardi; 3, Polygonum Bistorta; 4, a Potentilla, no flowers; 5, Veronica chamædrys; 6, Berberis vulgaris; 7, tuber, not known. Wretched specimens badly packed, and the numbers mostly obliterated. We do our best.—A. S. 1, Euonymus europæus, common Spindle Tree; 2, Cannabis sativa, cultivated Hemp, introduced with foreign seed.—E. J. 1, Narthecium ossifragum; 2, Senecio Jacobæa; 3, Achillea millefolium, rose-coloured form; 4, wretched scrap, probably a Potamogeton; 5, Eriophorum polystachyum (Cotton Grass); 6, a moss, Fontinalis antipyretica.—F. Yates. We cannot tell without flowers.—W. Y., Brentford. Stanhopea Wardi, var. venusta, figured in *Lindenia*, vol. vii., t. 315.—N. Devon. Phytolacca decandra.—H. R., Watford. Masdevallia maculata; 2, Cattleya Harrisoniana; 3, Epidendrum fragrans.—T. T. 1, Cymbidium aloifolium; 2, a leaf probably of Sophronites, no flower found; 3, Loasa lateritia; 4, Solidago canadensis; 5, Achillea eupatorium.—Palms. 1, Hibiscus rosa-sinensis fulgidus plenus; 2, Hibiscus Cooperi; 3, Dipladenia boliviensis; 4, Begonia foliosa; 5, Cyperus laxus; 6, Anthericum lineare variegatum; 7, Plumeria bicolor.—W. H. Bennett. 1, Arundinaria falcata var. glomerata (worth figuring if yours is a good specimen); 2 and 3: we are unable to distinguish these from each other; slight differences are to be seen, but there is nothing in the specimens you send to constitute even a variety. They both appear to us to be Arundinaria Falconeri.—S. B. C. A species of Agave, but which we cannot say, in the absence of complete specimen.—Bricknell. Cratægus Carrièrei, hort., Gard. Chron., February 20, 1897.—A. M. Tecoma jasminoides.

NURSERY NOTES: X. We may visit and note your establishment if we think it of interest to our readers to do so, but to offer us a bribe in the shape of an advertisement forso doing is discreditable. If it answers your purpose to advertise, we shall be pleased to accept your advertisement, but absolutely unconditionally. Our responsibility ends with the insertion of the advertisement. As business men, you must see that this is the only course a respectable journal could follow without loss of reputation.

PAINTING THE INTERIOR OF A HOUSE CONTAINING PLANTS: Palms. If the house be properly ventilated during the time the painting is being effected, and until the worst of the smell has passed, no injury will ensue. For a few days, leave a small amount of top ventilation open during the night.

ROYAL GARDENERS' ORPHAN FUND: We acknowledge with thanks the receipt of two shillings from Mr. W. Young, Brantford. This amount has been transmitted to the secretary of the Fund.

SPOTTED PELARGONIUMS: J. Shaw. The leaves sent are affected by the fungus referred to in this column on July 2, 1898.

TOMATOS: A. R. P. The roots of your plants are very badly infested with eel-worm, so often described and figured in these columns. Burn the plants and start afresh with new soil. As most loamy soil contain these creatures, it will be well to soak the soil in boiling water before using it.

COMMUNICATIONS RECEIVED.—W. H. S.—E. M. H.—A. A.—E. J. L.—G. F.—W. L. M., Texas.—A. B. F. M.—F. T. Sydney.—E. C.—W. B. & Sons.—C. de B.—T. C.—Sutton & Sons.—A. T., Washington.—C. A. C.—W. S.—E. B. B. Berlin.—Propagator.—M. W. M.—R. K.—W. Watt.—H. F.—W. Lee.—H. Humphries.—D. T. T.—R. P. B.—Secretary of The United Hort. Provident and Benefit Institution.—W. R.—H. T. M.—W. Swan.—Sec. Newcastle and District Hort. Mutual Imp. Soc.—A. Hope.—A. D.—R. D.—A. W.—A. J. K.—F. O.—G. P.—J. J. & Co.—J. K.—T. F. W.—W. C.—J. L. M.

PHOTOGRAPHS, SPECIMENS, &C., RECEIVED WITH THANKS.—F. W. M.—E. J. L.

(For Weather, see p. ix.)



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 8, 1898.

THE CACTACEÆ OF THE GALAPAGOS ISLANDS.

THE death of Dr. G. Baur, at the comparatively early age of thirty-nine, was announced in the current volume of the *Gardeners' Chronicle*, p. 32, where it was intimated that some particulars of his writings on the natural history and origin of the Galapagos Islands might follow that brief notice. But first of all a few of the principal events of his life. He was born in 1859, at Weisswasser, in Bohemia, and after the usual educational course, and some teaching on his own part, he went to the United States (in 1884) as assistant to the eminent Palæontologist, Professor O. C. Marsh. Finally, he went to the Chicago University, where he held an appointment as Assistant-Professor of Comparative Osteology and Palæontology.

In 1889 his attention was directed to the study of the Galapagos Islands by the arrival at Yale of a big land tortoise from the miocene of Nebraska, as it reminded him of the gigantic forms of these creatures which inhabit that group of islands. He at once conceived the idea that these islands originated by subsidence, rather than by upheaval; that they were formerly connected with each other, and with the mainland of America; and thenceforward he had a great longing to visit the islands to investigate their formation and natural productions. After many difficulties he succeeded in obtaining the necessary funds for the purpose, and was thus enabled to spend six months there—May to October—in 1891. He was accompanied and assisted by Mr. C. F. Adams, who predeceased him; and both the botanical and zoological collections were far more extensive than any previous ones from the islands. Dr. Baur and other specialists published the results, or some of them, in various periodicals, but not all of them came under my notice; and in an article on the Cactaceæ of the Galapagos Islands,* I commented on the absence of any additional knowledge of this family since Darwin's time. This article came under Dr. Baur's notice, and he very courteously sent me two photographs, one of which is reproduced on p. 266,† and the substance of some notes which he had published on the subject. But as the Cactaceæ play an important part in the natural history of the Galapagos, I will give a brief historical account of their discovery. I may mention, that apart from the genus *Rhipsalis*, which is represented by indigenous species in remote islands in the Old

World, the Galapagos are the only remote islands in which other Cactaceæ are indigenous, to say nothing of constituting an important and conspicuous element in the flora.

Although several travellers, including James Macrae and David Douglas, collected in the islands before Darwin, he was the first, I believe, to collect and comment on the Cactaceæ, and call attention to their abundance and utility. It was in 1835 that he was there, and on specimens which he obtained, the Rev. Prof. Henslow founded *Opuntia galapageia*.* Darwin also alludes to another Cactus, resembling *Cereus peruvianus* in habit; but he collected no specimens, as he did not find it in flower. He dwells particularly on the facts that the *Opuntia* grows in rough lava, where nothing else will grow; that it and an *Acacia* were the only trees that afforded some slight shade in the coast region of the islands; and that the Cacti are the only source of water during long droughts. Our illustration (fig. 75, p. 266) conveys, better than words could, the nature of the home of this giant Cactus. In the notes accompanying Prof. Henslow's description, it is stated that it attains to the form of a tree, averaging from 6 to 10 feet high, with a trunk about a foot in diameter, perfectly cylindrical, or very slightly tapering, and densely armed with rigid, deflected spines, so that no animal can ascend it. But Dr. Baur informed me that the largest he saw were about 20 feet high, with a trunk 2 feet in diameter. Any person who has cut up a Cactus will be able to form some idea of the large quantity of water stored up in these huge *Opuntias*; and there is no doubt that they play an important part in the natural history of the islands. Darwin observed that the succulent branches that had been blown off were eagerly devoured by the gigantic tortoises, by the lizards, and by various other animals. Lizards 4 feet in length were easily enticed whenever he threw them a piece of a branch; and small birds would come within a few feet of him, and peck at one end, whilst a lizard was eating at the other end.

Andersson, a Swedish botanist, who visited the islands in 1852, and published an account of his collections,† says of *Opuntia galapageia* that it abounded in all the islands, and adds that, at least, four or five species of Cactaceæ inhabited the islands. In his own words: "Sine dubio plures adsunt species Cactacearum his insulis propriæ, quas quidem observavimus ipsi, nec tamen ob angustias temporis eas rite colligere vel depingere licitum fuit. Quatuor vel quinque certe distinctas saltem vidimus."

It is still very uncertain how many distinct species of this family inhabit the islands, but judging from Dr. Baur's observations the prevailing Cactus is *Opuntia galapageia*, and this varies in stature and other particulars in the different islands. On this point he communicated to me the substance of an article of his, which appeared in a German publication.‡ On Barrington, Indefatigable, and South Albe-marle, it develops a very tall trunk; on Charles and Hood a relatively short but thicker trunk; on Jervis a very short trunk, branching from very near the ground; and on Tower Island it forms no stem at all, and appears as a dwarf bush. Dr. Baur attributed these modifications to the varying degrees of humidity, the greatest development occurring in the driest climate. The last statement is highly instructive from the gardener's standpoint. Mark! the

greater the aridity of the climate, and apparent sterility of the medium in which this Cactus grows, the greater the development.

Opuntia galapageia is remarkable in its genus alike for its colossal stature and the smallness of its flowers, which are not more than three quarters of an inch in diameter. Andersson states that the flowers are succeeded by a pretty red fruit, which doubtless also serves as food for some of the animal inhabitants of the islands.

Concerning Dr. Baur's theory of the origin of the islands by subsidence rather than by upheaval, I may mention that it has met with derision in some quarters, more especially by geologists; whilst some zoologists and botanists, without actually accepting his views, find them strongly supported by biological facts. Long ago Dr. A. Guenther, the President of the Linnean Society, suggested a possible former land connection,* and in his presidential address last May he went somewhat further in support of it. Personally, after many years investigation of remote insular floras, I am more than ever inclined to the view that I expressed† many years ago, that all the known means of dispersal of plants are insufficient to account for the present floras of remote islands, except in the low-lying Coral Islands. W. Botting Hemsley.

NEW OR NOTEWORTHY PLANTS.

DEUTZIA CORYMBIFLORA.

(SEE FIG. 76, ON P. 267.)

LET me first account for the name which we gave to this species without the authority of a botanist; a few words on the origin of this *Deutzia* will explain matters.

We owe its introduction into France to M. Maurice de Vilmoren, the well-known dendrologist, who received seeds in 1895 from the Abbé Forges, a French missionary. These seeds came from western Tse Tchuen, China. They germinated freely, and some of the pricked-out plants showed bud in November of the same year, and were flowered in April, 1896, by M. Boucher, a Paris nurseryman, to whom they were sent, and who the following year, on April 8, 1897, showed a flowering plant under the name of *Deutzia corymbosa* (?) before the Société Nationale d'Horticulture de France. After mentioning the origin of this new shrub, M. de Vilmoren explained the reasons which caused him to adopt the specific name of *corymbosa* provisionally.

The illustration given in the *Laubholzkunde* of Dippel for *Deutzia corymbosa* (Royle, after Robert Brown) seems, he says, to apply to this plant. The *Index Kewensis* refers *D. corymbosa*, R. Brown, to *D. parviflora*, Bunge. M. Franchet, of the Museum, also identified as *D. parviflora*, Bunge, the flowering branches sent to him by M. de Vilmoren.

M. Maurice de Vilmoren, he adds, noticed a marked difference in precocity at Barres in 1896 between the two plants, not to mention certain characteristics of growth, and MM. Lemoine, père & fils, of Nancy, unhesitatingly declared that the plants of which they were shown herbarium specimens, were not *D. parviflora*.

The *Handbook* of the Kew Arboretum, some five or six years subsequent to the *Index Kewensis*, did not join the two species *D. parviflora*, Bunge, and *D. corymbosa*, R. Br. It is, therefore, probable that they are sufficiently different to justify their position as distinct species, and that M. Boucher's plant is *D. corymbosa*, R. Br., as M. Maurice de Vilmoren decided after seeing the herbarium specimen and the Kew plants.‡

In examining the description of *D. corymbosa*,

* *Nature*, viii. (1895), p. 31.† The other represents the *Cereus*, referred to further on, growing abundantly among low bushes, and rising above the surrounding vegetation.* *Magazine of Zoology and Botany*, vol. i. (1837), p. 467, plate 14.† *Om Galapagos-Öarnes Vegetation*.‡ *Biologisches Centralblatt*, xi., 1892.* *Nature*, xii. (1875), p. 297.† *Botany of the "Challenger" Expedition*, Introduction, p. 51, and elsewhere.‡ *Journal de la Société Nationale d'Horticulture de France*, April, 1897, p. 334.

R. Br., it is to be noticed that this plant possesses, as does *D. parviflora*, Bunge, rounded petals with quincuncial aestivation, and that it differs in having rather larger flowers, the filaments of the stamens sharply toothed (instead of being indistinctly so), and glabrous petals; those of *D. parviflora* being pubescent on the outer surface. These characteristics appear to us sufficient to establish *D. corymbosa* as a simple variety of *D. parviflora*. Nothing, on the contrary, justifies us in identifying it with our plant, which has pointed petals, and a valvate, induplicate aestivation.

It is also impossible to refer it to *D. corymbosa*, Lindley, which is no other than *D. staminea*, R. Br., a species from the Himalayas and Eastern India, with bicoloured leaves, very late flowers, and which is not sufficiently hardy in our climate. There is still less reason to ally it to *D. corymbosa*, Hort., which is merely a form of *Philadelphus inodorus*, L.

Conclusion: the title *corymbosa*, whether given by Robert Brown, Lindley, or the florists, should not be applied to our plant. No hitherto described species can be identified with it; the three nearest are:—

1. *D. staminea*, R. Br.—We have seen in what particulars this differs; furthermore, a single glance is sufficient to show the distinctions.

2. *D. Fargesii*, Franchet, from Eastern Tse Tchuen which is unlike it in being of small stature, with thick leaves glabrous on both surfaces, with hard and reddish dentations; the petals are obtuse, the filaments of the stamens with teeth longer than the anthers, &c.

3. *D. setchuenensis*, Franchet, from Eastern Tse Tchuen. M. Franchet, after having grouped the plant under discussion with *D. parviflora*, Bunge, concludes by referring it to *D. setchuenensis*, Franchet; but the description he himself gives of this latter species prevents us from identifying them. Indeed, he mentions small leaves (3 centimètres in length); pauciflorous inflorescences; petals twice as long as the stamens, furnished outside with starry hairs, brown in the centre, none of which characteristics apply to our plant; consequently, we believe ourselves justified in giving the name *D. corymbiflora*, a specific term unappropriated in *Deutzia* nomenclature, and recalling sufficiently clearly the name under which the plant was first brought before the public.

It is a shrub of moderate size, attaining 4 feet in height, much branched, and very elegant. The new shoots are erect, round, with bronze-green bark, covered with many fine starry white hairs; the internodes moderately long, the leaves $5\frac{1}{2}$ inches long, nearly sessile, or with a petiole not over half-an-inch long, oval, lanceolate, pointed, often heart-shaped at the base, bordered with fine and short hairs, wrinkled on both surfaces, the upper surface very dark satiny, green, with single, short and appressed hairs; the lower surface clear green, with starry hairs on all the veins. The branches of the preceding year emit from all their axils divaricating branches, terminating in widely corymbiform panicles in di- or tri-chotomous cymes, on each of which a hundred flowers or buds may be counted in all stages of development. The pedicels are short and slender; the calyx is cupuliform, clear green, with seven triangular lobes, very short, the whole covered with starry whitish hairs. The five petals are valvate induplicate, and pointed at the extremity, with a broad base, and pointed tip; the flowers, when perfectly expanded, are snow-white, and measure three-quarters of an inch across; the buds are spherical. The five large stamens measure scarcely a third of the length of the petals, the five small ones have a very wide winged filament; the anther, inserted directly between the two teeth, slightly exceeds them in length; the three styles are very short, the height of the small stamens which conceal them. The filaments of the stamens form a small, close, and firm column, remaining till the blooming is quite over.

The appearance of the flowers somewhat recalls that of *Solanum jasminoides*; their number is so considerable that they cover the plant like a dome of

snow, and that during more than a month. In fact, the normal flowering begins in the second fortnight in June, when the flowers of *D. crenata* and its numerous varieties are nearly over, and, thanks to the numbers of buds which open in succession from the centre to the edges of the cymes the flowering is, at the end of July, as abundant and fresh as at the

THE OLD HALL, SOUTH-BOROUGH.

INTERESTING in every respect is the garden of C. B. Powell, Esq., near Tunbridge Wells; and even in the late hot and dry summer, which affected Tunbridge Wells' gardens more than it did those in most parts

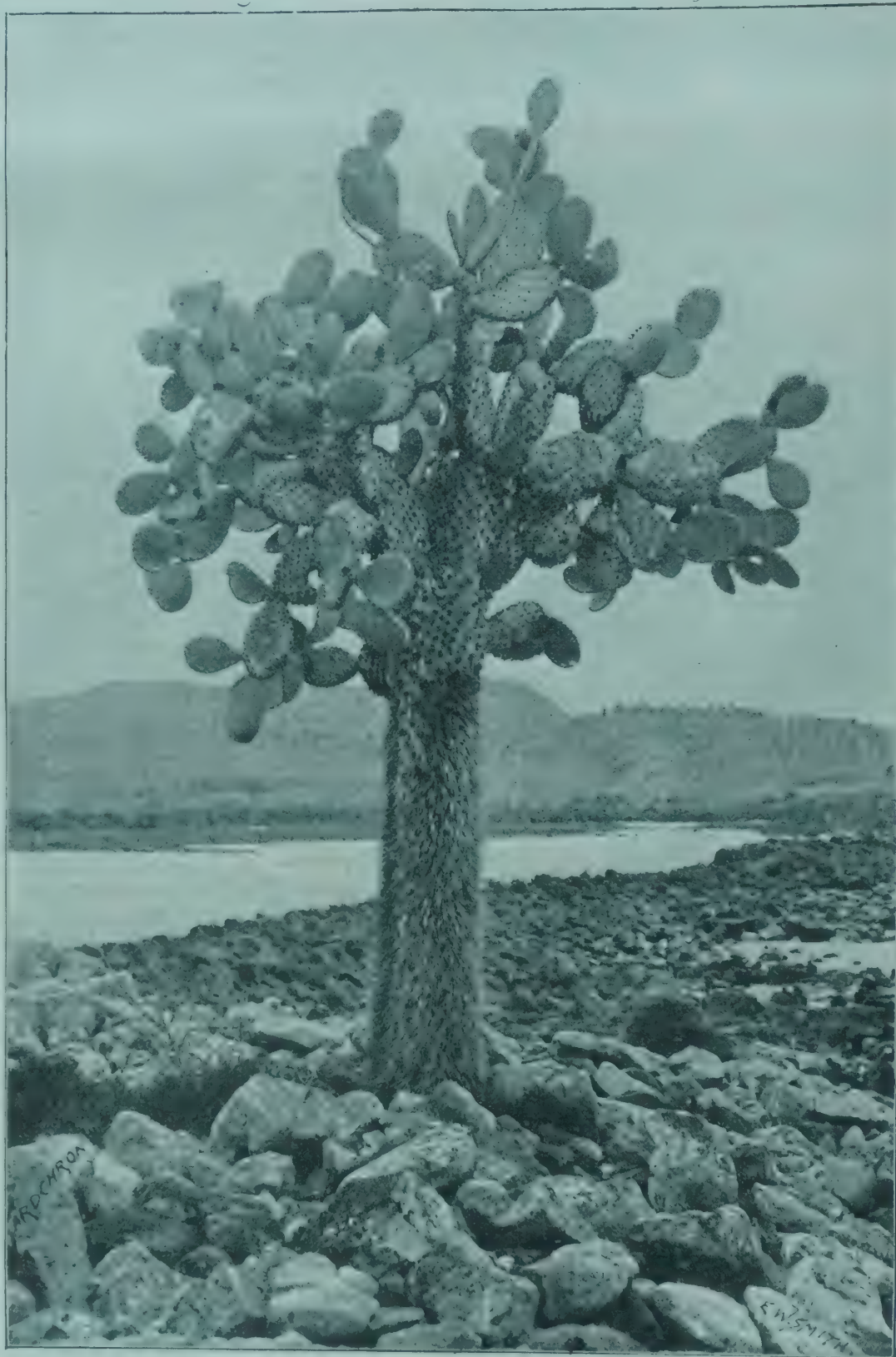


FIG. 75.—*OPUNTIA GALAPAGEIA* (HENSLOW).

(It attains a height of 20 feet, with a trunk 2 feet in diameter. See p. 265.)

beginning. Oftentimes the new shoots are, in September, again covered with new inflorescences, without weakening the flowering in the following year. Since its introduction this shrub has, in the open ground, perfectly withstood the winters of our climate.

This is, therefore, a very valuable and new attainment, and will be effective as a specimen plant on a lawn or in small clumps at the edges of shrubberies. *E. Lemoine, Nancy.*

of the country, many of the hybrids, which it is Mr. Powell's study to evolve, are making a good show. For example, the hybrid *Gladioli* of the *G. Lemoinei* and *G. Nanceianus* class, which have been independently worked up at Southborough, are very beautiful, the long beds of them being brilliant with fine spikes of large flowers of very fine substance, and varying from cream coloured to yellow, red, purple, scarlet, crimson, and all intermediate hues, their beauties being greatly enhanced by the dark crimson,

purple, yellow, and other rich colours displayed in the lower segments, and contrasting well with the lighter colours of the rest of the flower. Taken throughout, many of the varieties may not differ much from the Continental ones, but in the slate-blue, blood red, claret-coloured, yellow, and unusual colours in the class, there is decided novelty, while all the flowers have unusually good substance. The

and *C. longifolium*, which, if it be as hardy as *C. x Powellii*, should be a very fine plant; and opportunity is only waited to cross *C. campanulatum* and other species.

In the border adjoining the house were some nicely-flowered *Alstroemerias* in variety. Out of *A. pelegina* and *A. aurea* it is thought some very desirable new garden flowers may be secured.

how bad the season may be for gardening generally, if such plants are judiciously selected, a good show may be obtained. There were, in addition to the *Gladioli*, the double scarlet *Mule Pink*, *Napoleon III.*, and some of other forms of *Dianthus*, which were very fine. The *Eryngiums*, *Montbretias*, *Gypsophilas*, *Helianthus*, *Phloxes*, and many other of the showier perennials were very bright, and not affected by the drought, except in shortening their period of flowering.

THE ORCHIDS

are well cared for at Southborough, both Mr. Powell and his gardener, Mr. Dupont, taking great interest in them. A general collection is not attempted, though a large number of *Odontoglossums*, *Cattleyas*, *Lælias*, *Cypripediums*, and other showy species, are cultivated, and some of the more difficult of them with more than ordinary success.

In the *Cattleya*-house some very fine examples of *Cattleya Warscewiczii* were noted, superbly grown, as also some nice plants of *C. Lawrenceana*, examples of all the showy *Cattleyas* of the "labiate" group. On one side was a small lot of hybrid *Cypripediums*, and in bloom were *Calanthe veratrifolia*, *Cœlogyne Massangeana*, *Cattleya intermedia*, *C. Gaskelliana*, *Lycaste Skinneri alba*, *Brassavola Perrini*, *Maxillaria tenuifolia*, &c.

In the next intermediate-house, in flower, were *Sobralia macrantha*, *S. leucoxantha*, *Anguloa Clowesii*, *Odontoglossum bictonense*, *O. Uro-Skinneri*, *Oncidium curtum*, *Epidendrum vitellinum majus*, *Masdevallia ignea*, and a few others; while on one part of the stage was a very bright lot of the floriferous *Begonia Gloire de Lorraine*, and a number of neat plants of the variegated *Sibthorpia europæa*, and the red-berried *Nertera scapanoides*, both of which grow admirably well here. On the other side was a good and thriving lot of *Odontoglossum crispum*, *O. Pescatorei*, and other *Odontoglossums*, some few of them being in flower, and with them the scarlet *Cochlidia Noezliana*, and the mauve-coloured *C. vulcanica*.

Another house had *Oncidium Lanceanum*, *Vanda tricolor*, and some others, in flower; and in the greenhouses were some noteworthy well-bloomed plants of *Saintpaulia ionantha*, a number of species and varieties of *Lilies*, *Amaryllids*, and a very well-grown collection of *Crotons* and other decorative plants.

The Apple crop appeared to be sadly affected by the drought, and the trees which promised to be bearing a good crop had in many cases dropped the greater part of their immature fruits.

KEW NOTES.

CATTELEYA superba is now flowering nicely at Kew, a batch of plants of it, and *C. Lawrenceana*, having lately been forwarded by Mr. Jenman, of the Georgetown Botanic Gardens, Demerara; these two species being natives of British Guiana. The first named is not easily kept in health in this country, failure in many cases being, I believe, due to insufficient heat; but even under the best of treatment no one can keep the plant in health longer than three or four years. The following note from Mr. Jenman may therefore be useful as indicating the essential conditions of growth for this as well as for *C. Lawrenceana* in Demerara. He says, "I send you plants of our two native *Cattleyas*. In a wild state they grow in the sun on rocks and small stunted trees in districts where rain falls heavily almost daily for over half the year (spring to autumn), and for the rest the sun blazes all day long on the plants and rain scarcely ever falls." The best plants I have seen at Kew were grown for several years in the tropical fernery, where they obtained the same treatment as *Adiantums*.

CORYANTHES MACULATA.

This interesting Orchid has been in flower at Kew several times this year, the four-flowered spike now expanded in the tropical Orchid-house being the fifth spike produced since July. The flowers remain fresh only about a week after expanding, but during this time they filled their large bucket-like pouches to the brim with the watery liquid which exudes from the



FIG. 76.—*DEUTZIA CORYMBIFLORA* (LEMOINE): FLOWERS WHITE. (SEE P. 265.)

work is still being continued by crossing *G. oppositiflorus*, *G. cruentus*, and any other distinct species which can be obtained, and doubtless the prolific seed-beds already cropped will give many good things. In like manner, Mr. Powell's first hybrid *Crinum* (*C. x Powellii*) was about to commence a fine display, there being also a number of the pure white variety freely flowering. Mr. Powell has a small lot of another fine new hybrid *Crinum*, raised between *C. asiaticum*

Tuberous Begonias, of which also a special strain exists at Southborough, have done well under glass this year, and they were still very showy, both double and single-flowered; but outdoors they have done badly, and the only one which is really showy is the small dwarf-growing, scarlet-edging *Begonia*, only a few inches in height, raised by Mr. Powell, and always used as an edging plant at Southborough.

In the main, herbaceous perennials and bulbous plants are relied on to furnish flowers, and no matter

base of the column. This liquid is as odourless and tasteless as that secreted by the pitchers of *Nepenthes*. There is a good figure of this species in the *Botanical Magazine*, t. 3102, prepared in 1831 from a plant which flowered in the Liverpool Botanic Garden. The flowers are about four inches across, not unlike those of a *Stanhopea* in general effect, and coloured tawny-yellow, with brown spots on the segments. The plant is a native of various parts of South America, the example under notice having come from the neighbourhood of Rio de Janeiro. So far it has done well in a tropical house along with *Nepenthes*.

TROPICAL FRUITS AT KEW.

The new Mexican-house has afforded suitable conditions for the satisfactory fruiting of various tropical fruits which had not previously done well owing to lack of proper accommodation. The best of them all, best for the palate that is, and the most decorative when the fruits are ripe, is the Tree Tomato, a plant which has been recommended again and again, but which has found more detractors than admirers. One of these, a colonial friend, was at Kew the other day, and pooh-pooed the Tree Tomato from experience, as he said; but after tasting a Kew fruit he declared it could not be the same plant as that he had grown, and at once asked for seeds. At the present time there is a grand specimen of the Tree Tomato, *Cyphomandra betacea*, bearing about 200 of its egg-shaped, dull orange-coloured fruits which, when ripe, are as delectable as one need wish, a kind of combination of the qualities of a Tomato and a Grenadilla. This plant is scarcely two years old. In my opinion it is worth the attention of English growers of fruit for market. The Mango ripened its fruits last year, as also did the Japanese Peach, *Diospyros Kaki*, the Loquat, the Papaw, the Indian Fig, *Opuntia*, and *Psidium Cattleianum*.

HIBISCUS CANNABINUS.

This plant is known chiefly as the source of a serviceable fibre known as Deccan or Kanaff hemp, and it is said to be wild or cultivated in most tropical countries. Judging it by examples now flowering at Kew, it has considerable merits as a garden plant, as in a few months it has formed a shapely bush a yard high, with slender prickly branches clothed with long-stalked, palmately-lobed leaves from three to five inches across. The flowers, which are axillary as well as terminal, are large, say five inches across, and coloured deep yellow with a large crimson blotch at the base. Whilst this description would almost serve for *H. Manihot*, there is really a wide difference between the two plants. The Kew examples were raised from seeds obtained from British Central Africa, where the plant is said to be wild, and its fibre is used by the natives. The fibre is said to be strong and durable, and as the plant is easily grown it would not be difficult to cultivate on a large scale in warm temperate regions. Sir Joseph Hooker describes it as annual or perennial, and says that all parts of the plant have an agreeably acid taste.

CALLISTEPHUS HORTENSIS.

Whilst the garden forms of this, the China Aster, have been a failure this year, the type has been most successful. It is by far the most attractive of the annuals which have been flowering in the borders at Kew for the past few weeks, where many, whose opinions are entitled to respect, have declared it to be a much more beautiful plant than the best of the many varieties which are generally cultivated, and which have been raised by cultivators since 1731, when, according to Miller, it was introduced by means of seeds sent from China. For its re-introduction we are indebted to Messrs. Vilmorin, of Paris, who sent seeds of it to Kew last year. It grows to a height of from a foot to eighteen inches, branches freely, and is clothed with healthy, elegant foliage, every branch bearing a perfect flower from three to five inches in diameter, having a broad yellow disc surrounded by a single row of broad strap-shaped florets, coloured a glowing rosy mauve. It is a perfect plant for the open border, and it is just as effective when cut and placed in a flower-stand. Market growers might do worse than try it. *W. W.*

CLEMATIS PANICULATA.

In the United States this *Clematis* has for a good many years been regarded as the most beautiful of the small-flowered species, and as the most beautiful of autumn-blooming climbers. It is evidently a sun-loving plant, for with us in Britain it has never yet flowered with the profusion that characterises it under brighter skies. The past summer (in the south of England at any rate) has evidently been to its liking, for it is flowering with greater freedom than I have ever seen before. Some of the plants at Kew are well covered with the clusters of small white flowers, and seen in the mass they are very pretty, besides which they have a sweet strong fragrance almost exactly like that of Hawthorn. It is perfectly hardy, and a vigorous grower even in this country, and will climb to a height of 30 feet. It is allied to *C. flammula*, and its flowers have almost exactly the same charming perfume; the blossoms, however, are slightly larger, and appear at a later date. Although but little known in European gardens at the present time, it has long been known to botanists, Thunberg having discovered it in Japan during the last century. The plant is evidently one that requires to be grown on a sunny wall—not for protection, but for the better ripening of the stems. Flowering in September and October, it has a special value, and is certainly worth trying by anyone who has such a position to spare for it. *W. J. B.*

NOTES ON APPLES.

APPLES in this locality are scarcely an average crop this season, so many of the generally free-fruited varieties are comparative failures. Amongst the latter, Ecklinville Seedling is the worst. As a market Apple this variety is very much overrated. Those who recommended it strongly but a few years since are now regretting their choice. Upon the strength of such a reputation I planted 250 trees, bushes, and standards. From this number I have had extremely poor results during the last four years. Fruiterers in this neighbourhood do not care for the Apple. They complain of the skin being so soft that it will not bear handling. I shall regraft the whole of the trees with Worcester Pearmain, and other reliable sorts. Warner's King failed this year. It is generally to be depended upon, and is a good Apple to grow. Cox's Orange Pippin for the first time is a total failure, partly or mainly owing to the trees having become exhausted, through cropping heavily the two previous seasons. Devonshire Quarrenden is also a failure. Benoni is an Apple I value highly, but it is a failure this season. This variety does not appear to be much known, but it is a valuable mid-season fruit, and ripens after Worcester Pearmain, and before King of the Pippins and Cox's Orange Pippin. In form it much resembles King of Pippins, but is rather flatter on the top. The flavour is superior to that of the latter well known sort. The habit of growth is erect, therefore well suited for close planting.

Lady Sudeley has given but a limited number of fruits, as did also Lady Henniker. The Queen also is disappointing; it is a very much over-rated Apple, and too flat in shape. Mr. Gladstone, Beauty of Bath, and Chelmsford Wonder are also failures this season. At this place, the first-named is not worth its room in the best of seasons. Wealthy, too, has an extremely thin crop, and though showy, it is very liable to canker in strong soil after a wet autumn and severe winter; under such conditions, the bark does not mature sufficiently to withstand severe frost. Calville Rouge Précoce is too uncertain in every respect to be worth growing. Red Astrachan, for a wonder, has no fruit this season. Kitchen varieties that hardly ever fail to give a crop of some sort are valuable. Lord Grosvenor is one, and a grand substitute for Lord Suffield in soil where the latter refuses to grow. Too much praise cannot be bestowed on this Apple, especially where space is limited.

Keswick Codlin is another that is almost certain to bear if there be Apples at all. In point of quality it is hard to beat, but if the trees are too heavily laden, the fruit will be small; it is not at all times possible to thin them. Wormsley Pippin is another free-

bearing kind this year, though the fruit is small; in point of quality it is very good. Royal Jubilee has this year pleased me much; its bright golden colour is attractive, and the fruit is shapely, and of full size. Stirling Castle and Lane's Prince Albert are too well known to need description; they are both bearing well this season. To those who are planting the former variety for the first time, I would say that liberal manuring is necessary to encourage free growth; its constitution is weakly under ordinary conditions, especially if the trees bear heavy crops during the first two or three seasons. Lane's Prince Albert is one of the best varieties to grow as standards or half-standards. Jolly Beggar generally bears heavy crops of good fruit. Cox's Pomona I esteem apart from its size, and the richly-coloured fruits find a ready sale. Lord Derby is a trustworthy sort.

Schoolmaster is generally a free bearer, but the fruit is rather under-sized generally, and this year it is sure to be. Belle Pontoise is bearing extremely well, and the fruits carry a high colour. Magnum Bonum is another of the rich golden-yellow coloured sorts that invariably bears freely, its cooking quality is of the best. Golden Spire (figured on p. 253, *ante*), one of the best of the Codlin type, should be better known in small gardens; the growth is somewhat erect, and not too vigorous. Bismarck is cropping freely on trees judiciously checked in their exuberant growth by root-pruning, otherwise the crop is a scant one. Waltham Abbey Seedling is here prone to growth rather than to fruit-bearing this season, but it is an exception; when a crop can be secured it is a desirable Apple. New Hawthornden and its older *confrene* are both well laden with fruits, small and otherwise moderate in quality, the result, no doubt, of the excessive drought. Hollandbury is carrying but a thin crop, but is a desirable variety to plant. Domino, when established, appears to be worthy a place as a moderately early sort, in even a limited collection. Counsellor, synonymous with Yorkshire Beauty, has a full crop of shapely fruits; and Max Codlin ought to be grown in every garden, owing to its free cropping. I find this Apple succeeds capitally on its own roots. Cuttings, large or small, or even branches, strike root easily, and quickly grow into a bearing state. Many additional sorts might be named of the 135 varieties grown here for trial. Sufficient, however, has been said of the kitchen kinds as a guide to intending planters.

DESSERT APPLES.

Worcester Pearmain I look upon as a sure-bearing sort, and it is this year no exception. Were I confined to the growth of one Apple for market I should choose this. The growth requires but little pruning, as it fruits freely on the point of the shoots. King of the Pippins is also a sure-bearing sort when the trees have become established. This year they are heavily laden with fruit of medium size; if the trees be planted too deeply in strong soil the branches may canker. Blenheim Orange, now that the trees are twenty years old, scarcely ever fails to give a crop of handsome fruits. Beauty of Hants is a free-bearing Apple, resembling Blenheim Orange, except in flavour.

Pine-apple Russet is bearing fairly well this season. Its soft flesh is agreeable to some people, and it has a Pine-apple flavour; but the trees require too much space, as they do not crop freely on trees restricted in growth. Swedish Reinette is a promising variety. Kirke's Fame is but little known; it is conical in shape with a rather broad base, and rough-looking skin, richly coloured on the sunny side. The fruits keep well, and have a peculiar flavour. Baumann's Red Reinette invariably crops freely and colours well, but this season the fruits are undersized. Brownlee's Russet carries a heavy crop of fruit, with a rich, brown, russet tint. Margil is heavily cropped, and the flavour appears to be a mixture of that of Cox's Orange Pippin and of Ribston Pippin. Newtown Pippin has been thoroughly tested here several years without satisfactory results; this season there is an extremely heavy crop of poor fruits—so far it has proved a waste of time to plant this much-prized Apple in our English climate. Peck's Pleasant has a quantity of small fruit. Sturmer Pippin is bearing well, as it

does usually; the growth of this Apple is free, but does not require a great amount of space.

Duchess of Gloucester is giving grandly-coloured fruit. It is a pity this variety is so small. The fruiterers complain of its want of size, and many are in consequence deterred from planting it largely. Okera, a Russian Apple of a peculiar salmon tint of colour, is cropping freely; as a September variety it may be valuable. Allington Pippin bids fair to be a favourite, the shape of the fruit bears a close resemblance to Cox's Orange Pippin, one of its parents. Vicar of Beighton has rosy-red cheeks, and carries a fairly good crop; what it will be in point of quality, has yet to be proved.

Beauty of Stoke bears conical shaped fruits freely; its green skin is profusely dotted with white spots. Washington is good in point of flavour, and for an admittedly delicate cropper and grower is very good this season. Custard is bearing profusely, and the fruits are good though somewhat deficient in colour.

Bowhill Pippin and Caville Malingre are well laden, the former has a showy red cheek that cannot fail to make it a favourite. The latter has never previously borne any fruits but this year it is well laden with handsome fruit; it is an Apple that gives us pleasure when we get a crop, but it is seldom. *E. Molyneux, Swanmore Park, Hants.*

CHRYSANTHEMUM-RUST.

(PUCCINIA HIERACII, Murt.)

THIS very destructive parasite belongs to a group of fungi that have a bad record from the farmers' and horticulturists' standpoint. It includes such species as *Puccinia malvacearum*, the Hollyhock-rust; *P. graminis*, the rust of Wheat; and numerous others, equally injurious to cultivated plants.

All the species are true parasites, and in many instances produce three or four very different-looking forms of fruit, and live on different plants during different seasons of the year. As an illustration may be mentioned the rust of Wheat, which in the spring produces its first form of fruit on the young leaves of the common Barberry; the spores or reproductive bodies of this form are carried by wind, and inoculate the young leaves of Wheat, giving origin to the form of fruit called rust; later in the season a third form of fruit is produced on the Wheat leaves. The third form of fruit rests during the winter, and on the return of spring germinates, the minute spores produced being borne by wind on to the surface of damp leaves of the Barberry, where they germinate and enter the tissues of the leaf, and in about a fortnight's time produce the form of fruit, which in turn again inoculates the young Wheat-plant.

In the Chrysanthemum-rust the life-history of the fungus is somewhat simpler than in the examples described above; it produces only two forms of fruit, and both are developed on the same kind of plant, the Chrysanthemum.

The form of fruit too much in evidence just now on Chrysanthemum-leaves is what is termed the uredo stage, or summer form of fruit. The use of this form of fruit is to enable the fungus to extend its range of distribution as widely and quickly as possible. If a small portion of the powder contained in one of the rust-coloured pustules on a leaf is examined under the microscope, it is found to consist of myriads of pale brown, minutely-warted, roundish cells or spores, each of which is capable of germinating the moment it is mature. As is too well known, when the disease has once appeared, its spread is rapid. The spores are produced in rapid succession throughout the summer; as fast as they become ripe they fall away, and are carried by rain, wind, watering, syringing, the clothes of gardeners, &c., from one plant to another—an easy matter where the plants are more or less crowded together. Every spore that happens to alight on the surface of a damp Chrysanthemum-leaf germinates quickly, pierces the tissue of the leaf, and in about a week's time produces a heap of ripe spores,

ready in turn to continue the work of extending the disease. The above account is no exaggeration of what happens, and will, I trust, make clear to every one interested the manner in which the disease spreads. Later in the season, when the cultivator has lost all interest in the diseased plants, the same mycelium of the fungus which during the earlier part of the season has been producing myriads of summer spores, now gives origin to an entirely different form of fruit called "teleutospores," or winter spores. These latter differ in form from the summer spores, in being formed of two cells, and more especially in the fact that the winter spores will not germinate until after a period of rest, remaining in a quiescent state until the following spring, when they germinate and produce minute spores, some of which find their way on to the Chrysanthemum leaves,

will be seen how difficult it is to check the disease, if the summer form of the fungus once gains a foothold. A single dead leaf bearing teleutospores lurking in a corner is more than sufficient to secure a crop the following season.

Where the disease has previously existed, it would be wise to spray at intervals during the early part of the season with a solution of potassium sulphide—half an ounce to a gallon of water—as a preventive. This solution destroys germinating spores before they pierce the cuticle and enter the tissues of the leaf.

Finally, it must be remembered that the Chrysanthemum-rust is very common on many of our wild Composite plants, Hawkweeds, Burdocks, &c., and care must be taken that the disease is not introduced by this means. *G. Massee.*

RECENT OBSERVATIONS OF PROFESSOR ERIKSSON ON THE RUSTS OF OUR CEREALS.*

By DR. C. B. FLOWRIGHT.

SINCE 1890, Professor Eriksson has been working experimentally on the life-history of the fungi which cause the various rusts of our cereal crops. In July of last year he delivered a lecture at Stockholm to the Scandinavian Congress of Agriculturists, in which he epitomised his nine years' work. In 1894 he, in association with Dr. Ernest Henning, published that large volume, *Die Getreideroste*, in which the authors showed that the mildew of Wheat meant a great deal more than simply *Puccinia graminis* with its aecidiospores on the Barberry. Continued observations have confirmed and amplified the results then obtained. Prior to the appearance of this work the cereal rusts were regarded as being due to three *Pucciniae*, viz.—*P. graminis*, *P.* with its aecidiospores on Barberry; *P. rubigo-vera*, D. C., with its aecidiospores on Anchusa; *P. coronata* Corda, with its aecidiospores on Rhamnus. The authors found that *P. graminis* was divisible into two species—(1) the true *P. graminis*, with its aecidiospores on Barberry; (2) *P. Phlei-pratensis* E. & H., which occurs on *P. pratensis*, and *Festuca elatior* with unknown aecidiospores. But more than this, they found that *P. graminis* occurs in six biologically distinct forms on Rye, Oat, Wheat, Aira, Agrostis, and Poa, which they call *Forma Secalis*, *Avenae*, *Tritici*, *Airae*, *Agrostidis*, and *Poa*. Now these specialised forms, or varieties or sub-species, call them what you like, have this in common—that they all have their aecidiospores upon the Barberry; but the aecidiospores formed, let us say, from *Forma Secalis* on Rye, will not, when placed on Oat, or Wheat, or Poa, or Aira, or Agrostis, give rise to the uredo, but when placed on Rye they will do so. Nor will the uredospores from Rye give rise to the uredo on any of the above-named grasses. Let us go a little further: there is a certain group of grasses to which *Forma Secalis* is confined, this includes not only Rye, but also Barley, Twitch, *Elymus arenarius*, and *Bromus secalinus*, and to these (with one or two closely allied species, e.g., *Hordeum jubatum*, *Triticum caninum* and *desertorum*), it is confined. The next form, *Avenae*, is confined to the Oat, *Avena elatior*, *sterilis*, *Dactylis glomerata*, *Alopecurus pratensis*, *Milium effusum*, *Lamarckia aurea*, and *Triosteum distichophyllum*.

Far and away the most important to us, however, is the form on Wheat, which is confined to Wheat, and does not even go to *Triticum repens*. The importance of this fact is obvious, for in the first place there is no fear of Wheat mildewing adjacent fields of Barley, or Rye, or Oats, or being mildewed by them; nor, in the second place, is there any fear of the Wheat catching the disease from mildewed grasses in the hedge-banks, &c. Bear in mind that, although these six forms are morphologically indistinguishable, either in their aecidiospore, uredospore, or teleutospore stage, yet they are biologically distinct. Briefly, we have to deal with a form on Wheat,

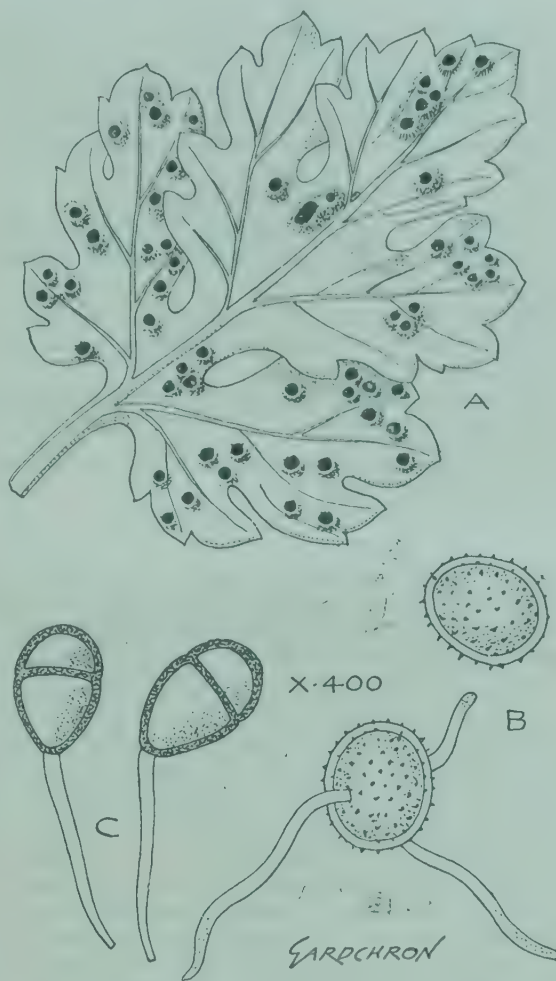


FIG. 77.—CHRYSANTHEMUM RUST: PUCCINIA HIERACII.

A, Leaf affected with "rust."

B, Uredo- or summer-spores, magn. 400 diam.

C, Puccinia-spores, or winter-spores, magn. 400 diam.

germinate, enter the tissues of the leaf, and in a short time give origin to the uredo, or summer condition of the fungus.

Soon after the winter spores are developed, the Chrysanthemum leaves die and fall; when all the leaves have fallen, the plant is absolutely free from disease, that is to say, there is no permanent mycelium of the fungus left in the plant, so that if it commenced to grow the next season it would be perfectly free from disease, and would remain so unless inoculated by the bodies produced by the winter spores as described above.

Summary.—The Chrysanthemum-rust disease is entirely the result of plants becoming inoculated by the resting spores produced by the fungus the previous year.

Too much care cannot be exercised in collecting and burning all diseased leaves, and this should be done early in the season before the winter spores are formed on the leaves. From the above account it

* Being a paper read at the Meeting of the British Mycological Society in Dublin, September 19, 1898.

another on Oats, and a third common to Oats, Barley, Rye and Twitch, the other three forms being of botanical interest only.

In the same way the authors found that *P. rubigovera*, D.C., was divisible into three good species, viz., *P. glumarum*, Sch.; *P. dispersa*, E. & H.; and *P. simplex*, Korn. Let us say a word or two about these *seriatim*.

P. glumarum (Schmidt), the yellow rust or spring rust, as we often call it in England, possesses well-marked characters in its uredo stage, by which it can be recognised with the naked eye, inasmuch as the minute uredospore-beds occur on large elongated yellow patches on the leaves. The teleutospores are scanty in proportion to the uredo, and the sori minute.

This rust owes its chief interest to two things: First, its great abundance and its conspicuousness alarm the Wheat-grower, making him think that his crop is going to be "mildewed," whereas, in reality, it rarely causes any appreciable diminution of the yield. Secondly, because it has the habit of sometimes developing its uredospores upon the chaff (Cosh) of the affected Wheat-plants, hence its specific name—*Uredo glumarum*. When this happens, it does injure the crop, because the uredospores spread from the chaff to the kernels themselves, causing them to be distorted, and more or less abortive. On many of these damaged kernels one can find spore-beds of the teleutospores when the grain reaches maturity.

In a similar manner, *P. glumarum* is met with in five specialised forms, viz., *Tritici*, *Secalis*, *Hordei*, *Elymi*, and *Agropyri*, on Wheat, Rye, Barley, Elymus, and *Triticum repens* respectively.

Puccinia dispersa, E. & H. — The brown rust is not nearly so conspicuous, nor is it so abundant as *P. glumarum*. It is met with later in the season in England, not long before harvest. The *Uredo sori* are like immature spore-beds of the uredo of *P. graminis*, only they are very much smaller. The teleutospores are so like those of *P. glumarum* as to be only distinguished with difficulty. It has its uredospores on *Anchusa* in autumn, those of *P. glumarum* being unknown. *P. dispersa* has four forms—on (1) Rye, (2) Wheat, (3) Twitch, and (4) on the Bromi.

Puccinia simplex (a species first described by Kornicke) has been known for many years. It is confined to Barley, and is common in England; it is easily recognised by the large number of its teleutospores, which have one cell abortive.

Secondly, there are the crown rusts, *P. coronata* and *coronifera*, whose life-history has been worked out by Klebahn. The former has its uredospores upon *Rhamnus frangula*, and is met with in five forms, according to Eriksson, viz., 1, *Calamagrostis*; 2, *Phalaridis*; 3, *Agrostidis*; 4, *Agropyri*; 5, *Holci*. The latter (*P. coronifera*) has its uredospores on *R. catharticus*, and occurs in six specialised forms, viz., 1, *Avenæ*; 2, *Alopecuri*; 3, *Festucæ*; 4, *Lolii*; 5, *Glyceriæ*; 6, *Holci*.

Eriksson draws attention to the fact that the extension of rust (uredo) from plant to plant is after all usually confined to a few yards. For instance, *P. graminis* on Twitch, is one of the commonest forms in Sweden, as it is in England; if one searches in the vicinity of a Barberry-bush one is almost sure to meet with it, but the affected plants are not found many yards from the bush. This form it will be remembered also occurs on Barley and on Rye, but although it is common enough on Twitch it seldom spreads, and then only to a limited extent to the above-named cereals. A further instance, showing how limited these uredospores often are, is given which occurred at the experimental station at Stockholm in 1894, where a plot of Horsford's Pearl, a variety of Wheat specially liable to *P. glumarum*, was grown between five other varieties. On the Horsford the characteristic uredo first showed itself on May 11, and in forty-three days had attained its maximum, but at the end of that period only three of the surrounding plots showed any signs of this rust, and these only to a very slight degree.

The germinating power, both of the uredo and of

the uredospores, is often but small and at best capricious. Eriksson considered, upon reflection, that since Roman times, hot days and cold nights have been considered favourable to mildew, he resolved to try the effect of placing these spores upon ice for some hours, and by doing this he succeeded in arousing them to germination. The distance to which the uredospores are capable of spreading the fungus from an individual uredial host-plant he considers has been greatly over estimated. Julius Kuhn in 1875 thought 100 mètres (120 yards) might be considered the limit, but Eriksson puts it at from 10 to 25 mètres (12 to 30 yards). The dissemination of the mildew in India, for instance, where the nearest Barberry is 300 miles away, on the Himalayas, cannot be effected by the uredospores. He found, too, that in Sweden the uredo on *Triticum repens*, beneath a Barberry-bush, sometimes appears before the uredospores on that bush; or, at any rate, before it had time to originate from the uredospores. Further, the teleutospores on *P. graminis* are capable of germination in spring only, and then only after they have been exposed to the vicissitudes of the previous winter, hence mildewed straw kept in a barn or in a stack is not dangerous. Further, he finds that it is those teleutospores only which have been developed in late autumn that are capable of germinating next spring.

Let us recapitulate these statements:—

1. That there are a multiplicity of different spore forms capable of affecting certain special host plants only.
2. That the uredo and uredospores exhibit a certain degree of obstinacy and capriciousness in germination.
3. The short distance they are capable of extending the fungus.
4. The fact that the uredo has been observed before the uredospores.
5. The limited germinative faculty of the teleutospores.

Taking into consideration the above facts, it is improbable that the general dissemination of rust takes place in the usually accepted manner, viz., from separate centres and by geometric progression.

In Sweden the dominant rust is *Puccinia glumarum*, and this form Eriksson has made the subject of special study, with the particular object of elucidating this question. In the first place he noticed that the uredospores in spring appeared on the young plant of certain varieties four or five weeks after the Wheat had been sown, and in the second place that sunniest parts of the fields were sometimes worse affected than the shady. These observations induced him to try the following experiment: young plants immediately after the melting of the snow in spring, were enclosed in wide glass-tubes carefully packed at both ends with cotton-wool. In from six to eight weeks *Uredo glumarum* appeared upon them. It is possible that this may have resulted from an infection in autumn, although it is not probable, for one would have *cateris paribus* expected had this been the case that the uredo would have shown itself sooner. He therefore sowed seeds of a variety of Barley extremely susceptible to yellow rust in sterilised soil, and properly protected from external infection, yet even then a certain proportion became rusted. He therefore concludes that the fungus arose from "internal germs inherited from the parent plant," which can only be detected just before the eruption of the young pustules. Hence, the fungus lives for a long time a latent symbiotic life as a mycoplasma in the cells of the embryo, and only assumes the visible form of mycelium just before the eruption of the sori. Therefore the severity of an attack of rust (or mildew) depends: (1) On the external surroundings, the environment of the plant, the weather, the soil, manuring, &c.; if these conditions be favourable, the latent mycoplasma ceases its symbiotic existence and develops into mycelium and spores. (2) On the accession of external infective material, i.e., spores from without. The mycoplasmic symbiosis of *P. glumarum* is more energetic in such varieties as Horsford's Pearl, which is especially liable to this rust than in Squarehead, which is practically exempt,

because the symbiotic existence of the parasite with this variety is so languid as to be practically non-existent.

TABLE OF ERIKSSON'S SPORE-FORMS OF THE PUCCINIAE OF THE CEREALS.

<i>Puccinia graminis</i> , P. (<i>Ec. berberidis</i>)	1 <i>Secalis</i>	on Rye, Barley Twitch, &c.
	2 <i>Avenæ</i>	on Oat, Avena sp. dactylis, Alopecurus, &c.
	3 <i>Tritici</i>	on Wheat.
	4 <i>Airæ</i>	on A. cæspitosa.
	5 <i>Agrostidis</i>	on A. vulgaris, &c.
	6 <i>Poæ</i>	on P. compressa, &c.
<i>P. Phlei-pratensis</i> , E. & H.	...	on P. pratense, Festuca elatior.
<i>P. glumarum</i> , Sch.	1 <i>Tritici</i>	on Wheat.
	2 <i>Secalis</i>	on Rye.
	3 <i>Hordei</i>	on Barly.
	4 <i>Elymi</i>	on E. arenarius.
	5 <i>Agropyri</i>	on Triticum repens.
<i>P. dispersa</i> , E. & H. (<i>Ec. Anchusæ</i>)	1 <i>Secalis</i>	on Rye.
	2 <i>Tritici</i>	on Wheat.
	3 <i>Agropyri</i>	on T. repens.
	4 <i>Bromi</i>	on B. arvensis, &c.
<i>P. simplex</i> , Korn.	...	on Barley.
<i>P. coronifera</i> , Kleb. (<i>Ec. Catharticæ</i>)	1 <i>Avenæ</i>	on Oat.
	2 <i>Alopecuri</i>	on A. pratensis, &c.
	3 <i>Festucæ</i>	on F. elatior.
	4 <i>Lolii</i>	on L. perenne.
	5 <i>Glyceriæ</i>	on G. aquatica
	6 <i>Holci</i>	on H. lanatus and H. mollis
<i>P. coronata</i> , Corda. (<i>Ec. Frangulæ</i>)	1 <i>Calamagrostis</i>	on C. arundinacea.
	2 <i>Phalaridis</i>	on P. arundinacea.
	3 <i>Agrostidis</i>	on A. vulgaris, &c.
	4 <i>Agropyri</i>	on T. repens.
	5 <i>Holci</i>	on H. mollis and lanatus.

THE WEEK'S WORK.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford.

The Planting of Bulbs.—The best time to plant the majority of bulbs for spring-flowering is during October. The work may be done in November, but by that time the ground is frequently very wet and cold, and these conditions are unfavourable to the bulbs.

Hyacinths should be planted in soil which has been well dug, at which time some leaf-mould and short rotted dung ought to be worked into the staple soil. Fresh manure must be avoided, and if old well-rotted dung is not procurable, use a double quantity of leaf-mould. Give the soil a few days to settle down previous to planting, and if it be of a wet or retentive nature, a little sharp sand may be put at the bottom of each hole into which a bulb is placed. These holes should be 4 or 5 inches in depth, and about 1 foot apart; and if planted in rows, the second row of bulbs should be placed in the intervals of the first. In the case of small beds, it is best to plant bulbs of one colour only; but in large beds, varieties of three or more colours may be used. If lines be planted in long borders, each line should be of a separate colour; or a good effect may be obtained by the planting of each separate colour in clumps.

Tulips.—The same kind of soil will suit these as advised for the Hyacinths, and they may be planted at the same depth, but the bulbs need to be planted about 3 inches only distant from each other. Tulips should be planted with due regard to the height of the different varieties, as some of these grow much taller than others. One of the varieties known as the Parrot or fringed Tulip, deserve extended culture, they embrace an endless variety of colours, and the flowers are generally larger than the other varieties. They flower somewhat later also than these.

Crocuses are pretty in clumps in borders, or in turf on banks, or by the side of woodland paths. They bloom much earlier than the other bulbs. Any kind of garden soil will suit Crocuses, and when once planted they will need no further attention, but will increase year by year. Pheasants and mice are very destructive to the bulbs.

Snowdrops are the earliest of spring-flowering bulbs, but they will not succeed in very loose soil. Any position in the garden will suit them, and the longer the bulbs remain in the ground the better they usually become and the freer they flower.

Scilla sibirica is a nice companion to the Snowdrop. The flowers are rich blue, and equally at home in any soil; it deserves to be cultivated in all gardens.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Vines.—In houses where there are Grapes still unripe, continue to maintain a warm, but fresh atmosphere. The hot-water pipes may be heated to keep the temperature about 65° at night and 70° by day, allowing a rise of 10° from sun-heat. Admit a little fresh air at all times, and regulate it according to the weather. Damp the surface of the borders once or twice each day. Do not let the borders become dry, but give them a thorough watering as frequently as required. When the Grapes have ripened afford the borders a mulching of long, dry, straw litter, with a view to maintaining the soil in a moist condition, and of preventing the moisture in same rising into the atmosphere. Vines carrying ripe Grapes, which are intended to hang until the end of the year, require frequent attention. If the Vines become dry at the roots, the berries may shrink. Outside borders, as well as those inside, must be examined, and when the soil approaches dryness a thorough watering should be given. The morning is the best time to do this, and in the case of inside borders remove the straw mulch during the process. Keep the atmosphere of theinery dry and fresh. When the weather is mild and dry admit all the air possible during the day, but close the house during rain or fog. Keep a little warmth in the hot-water pipes during damp, cold nights. At night when there is a slight frost, the temperature of the house should be about 50°, and if the frost be severe 5° lower will do no harm. The warmth in the pipes will prevent damp condensing on the Grapes, which if permitted would cause them to decay. Sudden changes in the temperature are not good, therefore admit and reduce air to the house by degrees. During strong winds the ventilation should not be sufficient to cause the bunches to be swung by it. Remove or push aside any leaves that are so near the fruit as to be liable to rub them. It will be necessary to examine each bunch at least once a week, and remove by means of scissors all mouldy or damaged berries. The least spot of mould upon a berry is sufficient to render its removal obligatory, as it so soon spreads. Lateral growths will need to be removed occasionally, and leaves that are quite dead may be removed also. Fallen leaves should be picked up, as no broom should be used, or anything done that would cause dust to rise. The broom may, however, be used after throwing water about, but such work should be done in the morning. Wasps are not likely to cause much further trouble, and the excluding material may be removed from over the ventilators so soon as it is considered safe. Robins may enter theinery and damage the Grapes, but they may be kept out by netting. They may be easily caught also by closing the ventilators when one is seen inside.

Exhausted Vines.—If any of the Vines are unsatisfactory through the soil of the border having become exhausted, and it is contemplated to afford them a new rooting medium this season, the work should be done as soon as the Grapes are ripe, and while the leaves are still green. The inside border should be renewed first, as directed in a former calendar. If the inside border was removed last season, the renewal of the outside border may be commenced at once; the Vines may then make some young roots, before the season has quite finished.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor LAWRENCE, Bart., Burford, Dorset.

East Indian-house.—Varieties of *Lælia anceps*, *L. autumnalis*, *L. albidia*, *L. Gouldiana*, *L. Marriottiana*, and *L. rubescens* (acuminata) now showing their flower-spikes should be placed in a position open to sunlight. Plants of *L. anceps* that have completed their growth will require less water, but other varieties mentioned should be given copious supplies until the new pseudo-bulbs have been fully matured. Some of the plants of *Phalænopsis Schilleriana*, *P. amabilis*, *P. Aphrodite*, *P. grandiflora*, *P. leucorrhoda*, *P. casta*, *P. intermedia Portei*, *P. Sanderiana*, *P. Stuartiana*, and *P. Esmeralda* have now finished making their leaves, and great care is needed in regard to watering them. During the growing season the sphagnum-moss has been kept green and fresh-looking by frequent supplies of water, but it should now be allowed to become almost white in colour before water is afforded. Do not now dip the plants, but merely sprinkle the surface of the moss and around the sides of the basket, using a fine-rose watering-can for the purpose. Allow no water to remain on

the foliage or in the centre of the plants. Any failure to attend to these details may lead to spotting of the leaves. Such species as *P. violacea*, *P. cornucervi*, *P. Marie*, *P. Luddemaniana*, *P. tetraspis*, *P. sumatrana*, *P. speciosa*, &c., are still making fresh leaves, but they must not be kept in a saturated condition at the root. At this season of the year a gummy exudation sometimes appears on the leaves of *Phalænopsis*, especially those of the darker-leaved kinds; if any such exudation be observable, it should be immediately sponged off. The *Pleiones* will now need careful treatment. The pseudo-bulbs are made up, and as soon as the leaves fall off, it will be necessary for a few weeks to give them less water, just sufficient to keep the soil moist. Immediately the foliage has fallen, place the plants in a dryish corner of the house, and treat them as plants at rest. When the flower-buds may be distinctly observed, the plants may again be sparingly watered until the flowers are open, but no longer, or the delicate blossoms will lose their colour and fall. Specimens of *Platyclinis Cobbiana* that are in full growth and producing their flower-spikes, will require abundance of root-moisture. *P. glumacea*, *P. uncatia*, and *P. filiformis*, being at rest, are perfectly safe in a shady part of the intermediate-house until growth re-commences. Syringe well up under the leaves of these plants, so that red-spider may be dislodged. Flowering plants of *Vanda corulea* should be suspended a short distance from the roof-glass, where they will obtain plenty of light, and be kept fairly moist at the root until their flowers open.

Temperatures.—At this season of the year it is a matter of importance that the night temperatures be not subjected to sudden changes. Early morning frosts have already occurred, and following so closely upon the great heat of summer, it is preferable to afford a little more warmth in the hot-water pipes the last thing at night, than have a low temperature in the morning. In the East Indian-house many plants may be permanently injured by a very low temperature, even if it continue but a short time. Such Orchids as *Phalænopsis*, *Angraecums*, *Calanthes*, *Phaius*, *Oncidium Lanceanum*, *O. hæmatochilum*, and *Dendrobiums* that are in full growth, are most susceptible to injury by a cold moist atmosphere. In the Cattleya-house there are also plants whose half-matured growths may be easily checked by a low temperature. It is advisable to see that none of the plants are too near the roof-glass, or they may get chilled. When sharp, early-morning frosts occur (and they generally come without any warning), the temperature of the various divisions may fall a few degrees below the standard temperature, and no watering or damping-down should be done before the proper degree of warmth is reached, as the drier the atmosphere during cold, the less likelihood will there be of injury. The temperature of the East Indian-house at night should be about 70°, that of the Cattleya-house about 65°, and the Mexican or intermediate-house a few degrees less. A fall of about 5° by the morning is permissible in each division. The temperature of the *Odontoglossum*-house should be about 56° or 57° at night, and about 52° or 53° in the morning.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Celery should be earthed up when the weather is fine. Make the soil as fine as possible with the spade, and carefully press it around and between the plants with the hand. On no account bury the hearts of the plants, or let any soil fall into them; earthing up when the soil is wet frequently causes rust or scab on the stems and leaves. It will be well to have in readiness the material wherewith to cover this important crop in the event of severe frost.

Carrots.—Late-sown Carrots in frames and pits, or in the open borders, will require to be thinned out to 2 inches apart. Remove any weeds that may appear among the young plants, and stir the surface of the soil between the rows with a hand-fork or hoe. The main crop of Carrots may be lifted at a convenient time during this month, provided they have finished their growth. The work should be done on a fine day, allowing the Carrots to be exposed on the ground for a few hours before storing them away. Sand is the best material in which to store Carrots. Place a layer of this on the floor of the cellar, next a single layer of Carrots on the sand, and cover the roots with sand again. Repeat this process until the heap is sufficiently high.

General Work.—Potatoes should be lifted and stored on the first opportunity. Prevent weeds growing by

freely using the hoe. Rake and sweep leaves into heaps. Remove any decaying vegetable leaves to vacant ground, to be buried by digging; and endeavour to have the garden and walks clean and tidy.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of RUTLAND, Belvoir Castle, Grantham.

Watering and Feeding.—The prolonged drought, combined with excessive heat for this period of the year, is causing fruit-trees of all kinds to suffer considerably. Recent returns from the Meteorological Office show that the deficiency of rainfall in the southern, south-western, and midland counties of England ranges from 6½ to 7½ inches. This equals 650 to 750 tons of water per acre for the districts as a whole. Individual places have even suffered more than this. Not only is the present crop of fruits of Apples and Pears small in size, but the leaves upon the trees are wilting prematurely, and just at the time they are required in the work of finishing and ripening the trees' growth. Much assistance in these circumstances may be given to the trees by affording root-waterings. [Where the supply renders this possible. Ed.] It will do good to every tree of all kinds, and cannot harm any of them. Trees that are fully exposed to the sun (as those on south walls) and those in very dry positions, or only partially established, should be attended to first. In every case sufficient water must be given to thoroughly soak the soil down to the roots of the trees. Liquid-manure from the farmyard, or house-sewage, applied first, and washed in with a good soaking of water, will be more beneficial than water alone. The growth of the trees, so far as wood-production is concerned, has ceased, and whatever nutriment is taken up by the roots now will go to strengthen the tree for next year's crop. If the surface of the soil be hard, it will be necessary to break it up with a steel fork previous to applying the water, so that it may penetrate. A light mulching of half-decayed hot-bed manure or short litter from the stable will tend to keep the water in, and will supply a little nutriment also. If rain should come before the work be finished, do not relinquish it, for many showers will be necessary before the whole of the roots are reached; and in the case of trees on walls, the roots do not get the full benefit of the rainfall.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Chrysanthemums that were planted out in May should now be lifted and potted-up. Before doing this, however, it will be well to give the soil a thorough good soaking with water, as the plants will then lift more satisfactorily. Prepare pots for them of various sizes, and the compost may consist of loam, one-sixth rotten manure, and sufficient sand to keep the mixture open and sweet. Pot the plants as soon after being lifted as possible, and remove them to the houses or pits prepared for them. Shade the plants heavily for a few days, and syringe them overhead frequently to prevent flagging as much as possible. Plants treated in the above manner, provided the roots are given plenty of water, seldom lose much of their foliage. When the roots have become active, the plants may be staked out. Late varieties grown as bushes in pots may be kept outdoors until the weather renders protection imperative. An erection of stakes with long laths nailed on the top will allow of covering material being used at a minute's notice in the event of sudden frost. Plants cultivated for the production of large blooms ought now to be under cover, but the structure containing them may be thrown open. Avoid cold draughts, however, and when the buds commence to open, do not further feed the plants with stimulants. All decaying foliage should be promptly removed from the plants, and everything done to promote a sweet circulation of fresh air. Should the plants be attacked with the rust-fungus (see p. 269), damp the foliage with a solution of sulphide of potassium, and then dust thoroughly with flowers-of-sulphur. Plants growing close to those affected, even if free of the fungus, had better be syringed every other day with the solution. All decayed foliage should be burned. Green-fly may be eradicated by fumigating.

Allamandas are flowering freely, and will continue to do so for a considerable time if fed with stimulants. Plants required to start early next spring may be kept cooler and drier at the root, so that they will become hardened. A rest of eight or nine weeks will be sufficient for them, and they may then be pruned back, and encouraged into growth.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Oct. 11	Royal Horticultural Society's Committee. Exhibition by the National Chrysanthemum Society, at the Royal Aquarium (3 days).
SALES.		
MONDAY,	Oct. 10	Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Oct. 11	Dutch Bulbs, at Protheroe & Morris' Rooms. Great Sale of 220,000 Fruit-trees and Bushes, at Perry Hill, Cliffe, near Rochester, by order of Mr. W. Horne, by Protheroe & Morris (2 days).
WEDNESDAY,	Oct. 12	Dutch Bulbs, at Protheroe & Morris' Rooms. Continental Plants, Greenhouse Ferns, Carnations, &c., at Protheroe and Morris' Rooms.
THURSDAY,	Oct. 13	Dutch Bulbs, at Protheroe & Morris' Rooms. Absolute Clearance Sale of Surplus Stock, at the Windlesham Nurseries, Bagshot, by order of Messrs. Fromow & Sons, by Protheroe & Morris.
FRIDAY,	Oct. 14	Dutch Bulbs, at Protheroe & Morris' Rooms. Imported and Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Oct. 15	Clearance Sale of Stove and Greenhouse Plants, at the Hooley Nursery, Purley, by order of Mr. A. Hunt, by Protheroe & Morris.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—51° 7°.

ACTUAL TEMPERATURES:—

LONDON.—October 5 (6 P.M.): Max., 61°; Min., 58°.

PROVINCES.—October 5 (6 P.M.): Max., 61°, Valencia; Min., 52°, Aberdeen.

General absence of rain and sunshine. Local frosts.

THE founding of a school of Horticulture in the Belgian Campine is the result of a complicated series of events, which at first sight seem to have no connection with agriculture and horticulture. Its origin shows once more, that one never knows to what ends a useful enterprise, carried out with skill and perseverance, can conduct intelligent and ingenious persons. The original scheme, says our Belgian correspondent, was intended to free the city of Antwerp as quickly as possible from the refuse of the streets. The administration had already provided a formidable flotilla for the removal of the rubbish to divers parts of the Campine (the level land situated on the eastern side of Antwerp, which at one time was as barren as it is to-day fertile). But the mass becoming too voluminous, especially the manurial matter, it was necessary to seek another solution. Burning the rubbish was proposed, but it was not adopted, thanks to the energetic efforts of M. F. X. DE BEUKELAER, Provincial and Communal Councillor of Antwerp. This gentleman lays it down as a principle, that it is a crime to deprive agriculture of the rubbish, or to burn manures, as long as uncultivated sandy and heathy lands exist in the neighbourhood of populous towns.

In 1894 the city of Antwerp purchased at Ryckevorsel (Campine), sixty-three acres of heathy soil at two hundred and twenty francs per acre. The land bordered a canal for a length of four hundred and thirty yards, and had also a steam tramway alongside. The turf and the Heath, the sole products of the soil, were sold at a good price as fuel and stable litter. After due preparation, notably the draining away of the water, the street refuse was deposited directly upon the heather, to the height of eighteen inches; next, the refuse was carefully and evenly spread, and afterwards covered with six inches of the heathy soil. The soil was duly harrowed, and received no more manure.

Next, different kinds of grasses were sown in due season, at the rate of forty-five pounds per acre. All the grasses grew, and proved very nourishing for cattle.

In 1897 a small plot of the land, of about half an acre in extent, where the street refuse was worked into the soil, was sown with Mangels, and yielded over thirty tons per acre.

This satisfactory result induced the managers of the property to persevere in the reclamation of the soil. In three years the property of Ryckevorsel will be completely utilised, and M. DE BEUKELAER has accordingly purchased another estate at Brecht, having an area of three hundred and sixty-eight acres. The purchase has been made on excellent conditions.

This property will be laid out and managed, so that it will in time form a superb estate with fields, pasturages, and woods, with clumps of fine trees, sheets of water, fish-ponds—all as with M. le Sénateur Cools at Ryckevorsel—upon a previously sterile heath!

The grounds at Brecht will also be utilised as a practical school of horticulture and agriculture, where the pupils will receive simultaneously with theoretical instruction practical lessons, so as to enable them immediately to apply their theoretical knowledge. The school will be organised according to the agricultural and horticultural necessities of the sandy regions of the Campine, and provide for the education of cultivators, who will be able to sell their products in the city of Antwerp, and in the populous centres of England.

The establishment of the professional school will be made with the help of the Government, of the province, and of the city. The promoter of the idea thinks of sending to the school a certain number of the inmates of the Communal Orphanage, who, according to him, after leaving school, would be able to find employment as skilled workmen and gardeners. They could enter the service of the public parks and gardens of the city, or obtain situations in horticultural establishments. Not only the material wants of the pupils would be assured, but the fresh air and the life of the country would confer on them good health and moral benefit.

ROYAL HORTICULTURAL SOCIETY.—At the next meeting, which will be held on Tuesday, October 11, in the Drill Hall, James Street, Westminster, a lecture on "Some of the Plants Exhibited" will be given by the Rev. Prof. GEO. HENSLOW, M.A.

THE RUST FUNGUS UPON CHRYSANTHEMUMS.—The injury that is being wrought by this pest in various collections is such, that we would draw the special attention of our readers to Mr. MASSEE's article upon the fungus, on p. 269.

THE GREAT FRUIT SHOW.—We learn that, although the exhibition was in itself highly successful, it, like its predecessors, resulted in so considerable a financial loss, that if sufficient means be not forthcoming in future, the shows will have to be discontinued.

HORTICULTURAL CLUB.—The first dinner and *conversazione* of the session 1898 and 1899 will take place on Tuesday, October 11, at 6 P.M. The subject for discussion will be "The Fruit-crop of 1898 and its Lessons," to be opened by Mr. GEORGE BUNYARD, V.M.H.

PROFESSOR VIRCHOW.—The opening of the session at the Charing Cross Hospital on Monday last was rendered memorable by the delivery of the second Huxley Lecture by the eminent German pathologist. The leading idea was, that the structure and functions of the cell as a unit lie at the base of all physiological action, whether in health or disease.

Alluding, in the course of his discourse, to bacterial germs, the lecturer said the most important of the infectious diseases are the result of the action of minute plants, grouped under the generic name of bacteria, the study of which, headed by KOCH's discovery of the bacilli of tubercle and of Asiatic cholera, has been one of the greatest of recent scientific triumphs. It is important to distinguish these germs from the effects which they produce—effects which depend largely on the reaction of the tissues and organs to their influence. The relation between the smaller parasites and the diseases which they cause is characterised by the term "infection," a word introduced in this sense by Professor VIRCHOW himself. He pointed out, however, that to assume that all infections are the work of bacteria was to go beyond our present knowledge, and was, indeed, likely to hamper further progress. As to the mode of action of bacteria, the lecturer said that this was mainly due to the virulent products secreted by them rather than to their power of consuming the common stock of nutriment, which was the way in which disease was caused by larger parasites. Lord LISTER was in the chair, and Professor VIRCHOW excited the warm sympathy of his audience by the manner in which he bore tribute to the immeasurable service which Lord LISTER, acting on the lines laid down by PASTEUR and others, had conferred on humanity.

FRUIT PACKING.—A correspondent enquires why we cannot have here, as in California, fruit packers—men who make fruit packing a special profession. When we see Plums in fine condition imported from California finding a ready sale, it is time for our fruit-growers to make the best of their produce.

— We find the following in the Twenty-ninth Annual Report of the Fruit-Growers' Association, Ontario:—"Regarding our packing, we can never expect uniformity under the present method of each shipper packing his own fruit. Some will do the thing well, and possibly get a reputation for their brands; but the multitude will do it carelessly, and get a bad name for Canadian fruit. If it were possible to encourage the establishment of packing companies, managed by experts, to do the packing for export, the difficulty would be overcome. Such companies would build cold storage warehouses at central points, and adjoining packing-sheds, and agree with the shippers to receive a certain quantity of fruit per day, and pack the same in the best manner for a given sum per case, loading the same in refrigerator-cars from day to day. Each case would be stamped with the trade-mark of the shipping company, and also with the owner's mark, so that the returns would be made direct to him from time to time."

GARDENERS' AIDS TO MUTUAL IMPROVEMENT.—We have received a copy of the seventh annual Report of the Newcastle and District Horticultural Mutual Improvement Society, a document that bears conclusive evidence of the beneficial work the Society is doing in this northern neighbourhood. Meetings are held monthly, when papers upon horticultural subjects are read and discussed, and exhibits of interesting plants, fruits, and flowers are contributed in competition by the members. The members number over sixty, and the Society possesses a useful library of nearly eighty volumes, including KERNER's *Natural History of Plants*, several of Professor MARSHALL WARD's books, and other scientific and horticultural works. The hon. secretary is Mr. J. ELLIOT, Jun., who would be pleased to impart the experiences of the Society to anyone interested in the formation of similar institutions.

"MUSTERBLÄTTER DER BINDERKUNST," Von J. OLBERTZ, Erfurt.—A portfolio containing some fifty attractive plates, representing floral arrangements appropriate for use at weddings, for table-decorations, funerals, and so on. The grouping is commendable for a lightness of touch too often lacking in our English trophies, and more variety is introduced than we are accustomed to see both in the choice of plants used, and the shapes into which they are arranged. Decorators in general may glean many hints from these pictures, and may also admire the dainty cover in which they are sent out.

THE WANT OF RAIN.—For some time past the weather has been exceptional. The summer has been conspicuous for its heat, and it has been more than usually prolonged. The mean temperature in London for September was 63°, which has certainly not been beaten more than once in recent years, and the mean of all the day temperatures was 75°, which is no less

feature is the persistent dry weather, the total rainfall for the past twelve months, from October 1, 1897, to September 30, 1898, showing a great deficiency of rain in nearly all parts of the British Isles. There is a considerable excess in the Hebrides, and a slight excess at one or two other places in the west; but in most parts the deficiency for the year amounts to several

places the aggregate fall is even less than one-half of the average. At Ardrossan, where the annual average is 37 inches, the deficiency amounts to 14 inches, and every month during the past twelve months has had a deficient rainfall. At Leith, where the deficiency is shown to be 6 inches, there was only one month (April) with an excess of rain, and then the excess



FIG. 78.—*ARUNDINARIA METALLICA*: HARDY BAMBOO. FROM MR. FREEMAN-MITFORD'S COLLECTION. (SEE P. 274.)

than 8° above the average. The summer has also been unusually bright, and in September there were in London 172 hours of bright sunshine, which is 60 hours more than the average. The summer has been exceptionally dry, and September had very little rain in any part of England. In the metropolis the rainfall was less than in any September since 1865, the total fall being 0.3 inch. The most exceptional

inches. The largest and most general deficiency is in the midland, southern, and eastern districts of England, although the deficiency is very great in the north-west of Ireland and the west of Scotland. In the east and south-east of England and in the midland counties the average annual rainfall is roughly about 25 inches, so that the figures show that only about one-half of the average rain has fallen; in some

was only 0.2 inch. At Dungeness, where the fall for the year is considerably less than one-half of the average, May was the only month with an excess of rain. In London we have had during the last twelve months rather more than one-half the average total fall; but, like many other places in England, there is no record of any twelve months from October to September as dry. *Daily Graphic*.

EXPERIMENTAL HORTICULTURE.—At a meeting of the Birmingham and Midland Counties Gardeners' Mutual Improvement Association, held in the Athletic Institute, John Bright Street, on Monday, Oct. 3, a paper on "Experimental Horticulture" was contributed by Mr. LEWIS CASTLE, manager of the Woburn Experimental Fruit Farm. The subject was treated at some length, the experimental work in Great Britain and other countries was reviewed, condensed instructions were given for the formation of new horticultural stations, and the directions in which useful work could be done were referred to. Mr. W. LATHAM, curator of the Botanic Gardens, presided, a considerable interesting discussion followed; a hearty vote of thanks to the lecturer closing the proceedings.

DEATH OF DR. AITCHISON.—We greatly regret to have to announce the death of Dr. AITCHISON, so well-known in botanical circles for his very valuable researches in the botany of Afghanistan and neighbouring districts. Dr. AITCHISON, who was born in 1835, and educated in Edinburgh, entered the Bengal Medical Service, acted as British Commissioner in Laduk, 1872, served with the Kuram Field Force, and was naturalist, under Lord ROBERTS, to the Afghan Delimitation Commission. His publications in the *Transactions of the Linnean Society* and elsewhere, have reference to the botany of the regions he traversed. He paid special attention to medicinal and economic plants, adding greatly to our knowledge of the vegetable productions of the country. Dr. AITCHISON, who latterly resided at Kew, had the misfortune to lose his wife, a calamity which impaired his constitution, and after a period of ill-health, he died at Kew on the 30th ult. He was a Fellow of the Royal Society, and received numerous marks of the appreciation of his services to the Indian Government and to botanical science. Some of his contributions appeared in this journal, and others in the *Transactions of the Botanical Society of Edinburgh*.

CAMELLIAS.—Those desirous of purchasing the standard works on Camellias, viz., the *Iconographie des Camélias*, by the Abbé BERLIOSE (three vols.), and the six volumes published on the same subject, with coloured plates, by the late AMBROISE VESCHAFELT, are advised to put themselves in communication with Mme. MARIE LORENTZ, 19, Avenue d'Orleans, Paris.

BALLOON DESCENT IN KEW GARDENS.—M. AUGUSTE E. GAUDRON, the French aeronaut, accompanied by his wife, made a balloon ascent from the Alexandra Palace on Saturday, at 5 P.M., passing over Waterlow Park, Hyde Park, and Earl's Court to Kew, where they remained stationary over the river for some time, finally descending upon the Palace Lawn in Kew Gardens.

NATIONAL ROSE SOCIETY.—A meeting of the committee will be held at the Horticultural Club, Hotel Windsor, Victoria Street, on Tuesday next, October 11, at 2 P.M.

MISPLACED ADVERTISEMENTS.—The Mayor of RICHMOND has succeeded in inducing Messrs. JAMES CARTER & Co., the seedsmen, to remove a large hoarding, 200 yards long, just outside Richmond Station, which obscured the view of their flower-garden and the orchards beyond. The firm had intended to use the hoarding as a huge advertisement; but yielding to the personal request of the Mayor, backed by a large number of leading inhabitants, they have demolished the structure. We trust other firms will follow the excellent example of the Messrs. CARTER, and confine their announcements to the many legitimate sources of publicity.

AUSTRALIAN ECONOMIC BOTANY: "Native Sago Plant," "Variable Plantain," &c. (*Plantago varia*, R.Br.).—In the latest issue of the New South Wales Government *Agricultural Gazette* appears an article under the title of "A New Indigenous Food Plant," which is alluded to in the *Gardeners' Chronicle*, June 25, 1898. The article in question claims to place on record for the first time the fact that seeds

of *Plantago varia* have been used as food, which is incorrect, as most Australians know. More than ten years ago this plant was figured and fully described in the *Town and Country Journal*, and subsequently described for the Government of New South Wales for the information of the Agricultural Department by Mr. F. TURNER.

M. CROZY, the raiser of so many fine Cannas, has been created "Officier du Mérite Agricole."

COUNT CHARLES DE KERCHOVE.—An imposing monument has been erected in Ghent in commemoration of the municipal and other services rendered by Count CHARLES DE KERCHOVE to the city of Ghent. The Count is well remembered in this country as having been the president of the Royal Society of Agriculture and Botany of Ghent, an office now filled with zeal and consummate tact by his son, Count OSWALDE DE KERCHOVE. The monument takes the form of an elegant column, springing from a well-proportioned pediment, and bearing a bust of the deceased magistrate.

ROSES IN THE RIVIERA.—The *List of Roses now in Cultivation at Château Eléonore, Cannes*, published by Lord BROUGHAM AND VAUX (London: JOHN & E. BUMPUS), gives such a representation of what Roses will do under a congenial climate as may well surprise those accustomed to grow these plants in England only. In Cannes and the neighbourhood there is "stiff red soil with affinity to clay, and a rich loam of great depth," which suit the Roses well, especially with the additional conditions of liberal watering and manuring. There are two flowering seasons, from October to the middle of January, and from the middle of March until the end of May, the latter being the more important of the two. As examples of the size and beauty attained on the Riviera by Roses familiar to us as comparatively tender plants in England, the compiler of this list calls special attention to a plant of Marie Van Houtte seven or eight years old, and 70 feet in circumference; and one of Papa Gontier, grown in cylindrical form, whose diameter is 7 feet, and height nearly 25 feet. Another noteworthy inhabitant of the gardens of Château Eléonore is *Rosa gigantea*, which was flowered therein last April for the first time in Europe. Found in Upper Burma by Sir H. COLLETT, at an altitude of 4000 to 5000 feet; and also found in Manipore, about 2000 feet higher. "A splendid plant, making growths of 40 feet or more, with rambling branches, armed with irregular prickles of moderate size, often in pairs at base of leaves, which are about 3 inches long, and glabrous. The flowers are solitary, about 6 inches in diameter, which size will not unlikely be increased when the plant is older and stronger, of a golden-white with yellow centre, containing an unusual quantity of pollen. Petals large, broad, imbricated, disk large, styles much exerted, free, villous; stamens long. The most desirable, and by far the finest single Rose I have ever seen. It does not seem to be very hardy, and is subject to mildew. The bud is long, larger, but very closely resembles that of Madame Marie Lavallée, and of pure gold colour. This Rose when in flower should obviously be shaded, as the sun soon extracts the gold from the blooms, leaving behind a substitute of dirty white. At a short distance the flowers bear a close resemblance to a Clematis."

MOSQUITOS AND MALARIA.—It is alleged by a writer in the *British Medical Journal* that the mosquitos are affected by parasitic germs (bacteria)? These germs are capable of being introduced into the human frame by the bite of the mosquito, and set up malarial poisoning. It is only some mosquitos that are liable to infection, and only some germs that infest them, so that there are good grounds for believing that as our knowledge increases, it may be possible to devise means for the prevention of malarial fevers. Residence in unhealthy spots in the tropics will then be less dangerous to health than at present.

"SURPLUS STOCK."—Students of language will be interested to know that this expression, partly Latin partly Teutonic, is adopted into French. A

circular before us announces the sale "des surplus stock," thus making use of a plural article and a singular noun. But the vagaries of language are as unaccountable as the fashions themselves.

SAN JOSÉ SCALE.—This is, says Dr. FLETCHER, the well-known entomologist, the most serious pest that has ever occurred in Canadian orchards. We mention this, as there is a tendency to minimise the dangers that may arise from the introduction of this scale. If it breeds so freely in Canada, it may do so here. Fortunately, so far as we know, it has not appeared here in a living state.

THE OLIVE CROP IN SPAIN.—The accounts received as to the baleful effects of the recent inundations in the provinces of Grenada and Seville are very serious. Not only does there appear to have been a great loss of farm stock and of human life, but we are told that the Olive crop has been nearly or quite destroyed. The waters seem to have risen to the height of the Olive-trees, and swept away the fruit. This must prove a great calamity, especially as things now are in Spain; and it is to be hoped that the services of the civil engineer and of the forester may be called in, so that a recurrence of such a catastrophe as that recorded may be rendered, as far as may be, impossible in the future.

"SUNNY JERSEY."—An historical and descriptive guide, edited by PERCY ED. AMY, illustrated with a large number of photographic views, most of which have been taken specially for this work by E. HAMILTON TOOVEY, Jersey. With map of Jersey (Bournemouth: W. MATE & SONS). The scope of this work is well set forth in its title, so that we need only add that it contains plenty of pictures for the money (a shilling) charged for it, and all the information that an intending visitor to the island is likely to require. Jersey has latterly become more and more widely known owing to increased facilities for access, and the book before us is in some measure a record of its increasing status and popularity.

FLOWERS IN SEASON.—Messrs. T. S. WARE & Co. send us from the Hale Farm Nurseries, Tottenham, specimens from the open ground, of the lovely *Amaryllis Belladonna*, and the variety *blanda*, with rounded segments of a pale pink colour. With them came a spike of that remarkable plant, *Hesperaloe yuccifolia*. The leaves are very long, thick, linear, channelled with loose threads at the edges, as in some *Yucca*. The flower-spike is tall, erect, with numerous loose clusters of orange-pink flowers, each flower tubular, and about three-quarters of an inch long. The plant has been blooming since the end of May, and will continue to do so for some time. Some years since a plant of this species at Tottenham flowered continuously from one spike, from June of one year to June of the following year. The plant is a native of North-West America.

HARDY BAMBOOS.

(Concluded from p. 246.)

ARUNDINARIA METALLICA (*Mitford*), Kanéyama-Daké.—This Bamboo, recently introduced by me from Japan (fig. 78), is likely to make a valuable covert plant. It is very like *A. Veitchii* in character, but bolder and stronger, and does not wither at the edges in winter like *A. Veitchii*. It has most rampant rhizomes, and is therefore not suited for anything but woodland work. In a garden it would soon become an ineradicable nuisance; in a covert, on the contrary, it is a most beautiful ground-plant. Being a native of the coldest districts of Japan and of the island of Yezo, it is perfectly hardy. The name *metallica* is a translation of the native Japanese name. *A. B. F.-M.*, September 13, 1898.

[We take this opportunity of figuring a seedling plant of *A. Laydekeri* (fig. 79, p. 275), grown from seed ripened in the open air in the garden of Mr. Freeman-Mitford, which was exhibited by him at the Royal Horticultural Society among a very interesting collection of Hardy Bamboos. Ed.]

THE CULTIVATION OF THE SCOTTISH BRAMBLE.

I HAVE recently visited the gardens at Carron Park, Larbert, N.B., where Mr. Caldwell, the gardener, has been cultivating the wild Scottish Bramble. Mr. Caldwell has two rows of plants, one running east and west, and the other north and south, and they are both laden with ripe, large, finely formed and luscious Blackberries. It is some years since Mr. Caldwell first formed the impression that the wild Bramble might, were it cultivated, take its place amongst the best of table-fruits, and give an adequate return for the time and labour expended upon it. He accordingly procured some plants in the neighbourhood, and with the consent of Mr. Cadell, the proprietor of Carron Park, he planted them in the garden. He first set a row of plants 17 yards in length, and running east and west. The plants were placed 3 feet apart, and were trained up wires running between posts, 6 feet in height. For the first year or two the plants did not answer expectations, but this has been attributed to a too free use of manures. By the third or fourth year, however, the plants had got a firm hold, and ever since then they have flourished. Another row of plants, 22 yards in length, was afterwards planted, but this time the row was run from north to south. Experience has proved this to be the best way, as the plants obtain the advantage of the sun both in the forenoon and afternoon, and the fruits upon both sides of the row are more quickly ripened.

The method of cultivation adopted by Mr. Caldwell is easily described: In the winter-time they are top-dressed with manure, which for the first year or two should be used sparingly, and in the spring a little earth is put on the top of the manure. By the third year the plants are at their best, and may be treated liberally. Beyond ordinary thinning-out they require very little attention. Every year for some time past Mr. Caldwell has had a large crop of excellent fruits. Last year, for instance, he gathered 99 lb. of Blackberries from his two rows, and the crop would have been heavier but for an early and severe frost. It is estimated that the crop for the present season will amount to 160 or 180 lb. Mr. Caldwell thinks that the cultivation of the fruit on a large or small scale would prove highly profitable. The plants take up very little room. The rows of plants can be placed about 3 feet or 3½ feet apart, whilst between the rows, if so desired, vegetables could be planted.

Brambles do not appear to be so subject to the attacks of vermin and birds as other fruits. The Bramble as a fruit is held in high favour for table use, and also for certain medical purposes, and the demand for it is far greater than the supply. What fruit Mr. Caldwell has had to dispose of he has had no difficulty in finding a market for at a good price; in fact, he has not had sufficient to supply the demand in his own district alone. Another excellent feature about the Bramble is, that it continues to fruit for a period of two months. Altogether, Mr. Caldwell is to be congratulated on the success which has attended his cultivation of the Scottish Bramble. W. C. M.

[Where the cultivation of Blackberries is adopted by gardeners, care should be taken to obtain the best forms, such as *Rubus laciniatus* or the best varieties of the common Bramble. There are many varieties, and they possess varying degrees of value. Ed.]

ROUND MAIDSTONE.

(Continued from p. 252.)

LINTON PARK.—This charming country seat lies about 4 miles from Maidstone, and the route from there is through an open country, which rising rather abruptly from the town, is more or less hilly the whole distance. Just before reaching the park-gates, there is the tiny village of Coxheath to the right, where early last century a portion of the Army was encamped, but which now is exceedingly quiet, and with its Hop-fields and fruit-gardens, is suggestive of anything rather than strife or battle.

The ridge on which Linton Park lies has a deep and fertile soil. In the valleys there is not so much

earth, and it is supposed that when these were covered with water the stream created a channel, and washed therefrom much mud, that was deposited layer upon layer on the sides of the ridges. No sooner have we passed the park-gates than the Elm-trees are remarked to be very fine specimens, and the timber generally is indicative of a good staple soil. The present owner of Linton is Mr. F. S. W. Cornwallis, and it is pleasant to record the fact that Mr. Cornwallis, who is a young man, and has only been proprietor for a few years, has sufficient appreciation of the beauties of the place, that he is now engaged in making the gardens more efficient by building a quantity of glass structures. The future of Linton Park, so far as it can now be judged, is particularly bright.

The garden is especially interesting to two classes of visitors. Its two features are the pleasure-grounds, which contain excellent specimens of uncommon species of trees; and the kitchen-garden, where the Apple-trees are grown, and Apples that for many a year the present well-known and exceedingly genial gardener, Mr. J. McKenzie, has exhibited with more or less success.

THE PLEASURE-GROUNDS

were laid out and planted by the late Mr. Masters, of the Canterbury Nurseries, and for many a day the magnificent trees in them will bear testimony to the knowledge and discrimination brought to bear upon that work. There are few places that can boast in a



FIG. 79.—A SEEDLING PLANT OF ARUNDINARIA LAYDEKERI.
(Grown in the open air at Batsford.)
(See p. 274.)

like area such a number of interesting species. In reply to a question, Mr. McKenzie said that very little alteration had been done since the work was first undertaken; nor is it needed, "for the master-hand is evident in every part of it." The effect now would have been even greater than it is had the idea of the landscape gardener been perfectly carried out; but in succeeding years the requisite amount of thinning was not done, and it is now too late.

One of the most interesting of the noble trees is one of the Cork tree (*Quercus suber*), which stands in the middle of a gravel walk, and is encircled by a fence. It was planted by Sir Horace Mann on September 20, 1778. Several feet from its base the magnificent trunk has a girth of about 11 feet, and the tree is a very beautiful specimen indeed. The graceful deciduous Cypress (*Taxodium distichum*) was observed in several nice but not over-large specimens, probably 50 feet high; they must have felt very severely the need of more root-moisture during the present season.

A few yards away there is such a specimen of *Araucaria imbricata* that is seldom seen. About 40 feet high, or thereabouts, the tree is in vigorous health, and as yet, at any rate, is not dispossessed of its lower and larger branches. A Copper Beech is almost as remarkable—indeed, in some gardens it would be a most prominent feature, but it is here surrounded by many Conifers of absorbing interest. The same might be said of several majestic trees of the common Elm, one with a marvellously pretty trunk, and running upwards of 120 feet high. "That specimen of *Thuia gigantea*," said Mr. McKenzie, pointing to a magnificent specimen near

upon 70 feet high, "is that figured in *Veitch's Manual of the Coniferae*," and well does it deserve such an honour. But we move slowly towards the front of the house, and our attention is directed to several splendid specimens of *Magnolia conspicua*, which in April or May must make a wonderful floral display, and shed a delicious perfume for some distance around.

The house was built early in the last century, and commands a remarkable view of the Weald, which lies stretched before it, and from the balcony of the house this view becomes very considerably enlarged. The handsome building itself is partly hidden by various species of climbing plants and *Magnolia grandiflora*. Immediately in front also are Pomegranates, Banksian Roses, Bays, &c. Five flights of steps lead from the terrace down to the flower-garden, and under the terrace are several specimens of the European Palm, *Chamærops excelsa*, one of them apparently over 20 feet in height. These Palms, said Mr. McKenzie, are given no shelter during any part of the year. *Aralias*, and *Myrtles*, too, are sufficiently hardy to flourish here.

Turning to the right of the house, we pause to admire several beautiful specimens of the *Sequoia* or *Wellingtonia*. Roughly speaking, they may be 70 feet high, and are vigorous specimens, though, it may be feared, some of them show indications that ere long the lower portion of the trunks will become bare. As the trees grow high, it is apparently their nature, and especially so in the British Isles, to cast away their lower branches. In some wild and picturesque scenery, such as is very uncommon in England, the trees even then, as they tower above the deciduous species, are still grand.

We are soon in the midst of a group of Japanese Conifers, in which many varieties of the *Cupressus Lawsoniana* are very conspicuous. The *Cupressus* are very fine, and make robust growth; *Retinospora squarrosa*, &c.; *Thuiopsis dolabrata* and others, *Cryptomerias*, &c. *Cryptomeria japonica* is not so happy as most of the others. *C. elegans* looks better than it. In *Veitch's Manual*, already mentioned, some of these Japanese species as they are growing at Linton have been illustrated, and a single specimen of *C. elegans*. Wonderful specimens of *Abies orientalis* and *A. concolor* (*lasiocarpa*) may be seen in these interesting grounds—high trees, with well-furnished pyramidal growth.

From the western side of the shrubbery to the north front of the house, extends an avenue of Elms, rare old monarchs; and parallel with this is an avenue of *Sequoias*. These were planted upwards of thirty years ago, and some of them are probably more than 70 feet high. The majority are vigorous, richly-clothed specimens, but much variation in habit may be noticed in them. One is particularly dwarf, being little more than half the height of the tallest. It is very interesting to observe such differences, which, as the trees become older, are accentuated. The only additional tree we can now mention is a moderate-sized, plumose specimen, of the Maidenhair-tree, *Ginkgo biloba*.

FRUIT AND VEGETABLES.

It is a pity that a kitchen-garden was not laid out at the same time and by the same hand as the pleasure-grounds. It would have been more satisfactory than the present one, which is almost destitute of walls for fruit-trees or for protection. Our remaining time, which was limited, was spent with Mr. McKenzie amongst his Apple-trees. There is no such fruit-garden here as the one at Barham Court, and though Mr. McKenzie has shown splendid Apples at the Palace shows, as last year, for instance, when he won something like "twenty-nine" of the classes for single dishes, and staged some record specimens of Peasgood's Nonsuch—he has not a great number of trees. Nevertheless, his enthusiasm is in his Apple-tree cultivation. The withering drought of the present year was the reason that he was unable to show fruits last week at the Crystal Palace. When these notes were taken, it was not certain whether or not it would be possible, but the trees were suffering terribly, and the water supply had run short, that even had labour been never so plentiful, it could not

be applied. All the supply had to be kept for plants in pots. Such a situation as Linton, high on a ridge, and over the Ragstone, is most perfectly drained, and though generally a favourable circumstance for fruit-growing, it must this year have increased the need for rain.

The secret of the success that attends these Maidstone growers in the cultivation of fruit, lies very much in the fact that they treat their fruit-trees as they would the most important crop. Each of the trees is given almost equal consideration to that an orchard-house tree in a pot requires. It is watched.

Mr. McKenzie knows just what crops each tree ripened last year, and what it has now. Also the growth it made last year, and is likely to make this. He has a very good idea of the state of its roots; he can tell if the tree is suffering from dryness, and if it requires manurial stimulant, in the same way that an experienced Vine-grower gauges the condition of his Vines by an examination of the foliage. Mr. McKenzie's enthusiasm for his Apples may be gathered from his words:—"When once a gardener has undertaken fruit-growing with zest, he can never give it up. The love of it will remain with him to the end. I have grown Chrysanthemums as a specialist, and have been enthusiastic in the showing of other plants; but Chrysanthemums lost their novelty. Fruit has not, nor will it."

GLASS STRUCTURES, &c.

But we must leave the Apple-trees, and mention in a concluding paragraph a few facts about the glass-houses, &c. The whole of those which previously existed here have been taken down, and Messrs. McKenzie & Moncur, of Edinburgh, are engaged at the present time in building a large number of new ones, the woodwork in which is all teak. A new bothy has been completed, and in appearance and convenience it is beyond praise. Plant-stoves, Melon and Cucumber-houses, too, are finished. Then there is a range of lean-to houses, facing south. This is 400 feet long, 18 feet wide, and 16 feet high. It will be divided into eight divisions, and be used as vineries, Peach-houses, &c. The whole will be heated by two powerful Cornish boilers, and the smoke from these will be carried away some distance up the side of the hill. We hope to be able on a future occasion to give more particulars of these houses. In the meantime, we must leave Mr. McKenzie to his work of taking over and furnishing the houses as they become ready; it will serve to detract his thoughts somewhat from the suffering the drought is inflicting upon the trees out-of-doors. P.

HOME CORRESPONDENCE.

COTTAGE GARDENERS' COMPENSATION ACT.—

How far is it safe and prudent to let building land to market gardeners without being called upon for unreasonable compensation? 1. Can a landlord and tenant contract out of the Compensation Act? 2. What notice is required to obtain possession of the land for building purposes? 3. Is the same notice required as in a farm according to the Agricultural Holdings Act? The Act is not explicit. I have land adapted for building purposes, and wishing to benefit poor people in my district, I have let it in allotments, but I have been obliged to take crops useless to me, amounting to several years' rent. I want to know whether a landlord can protect himself without injustice to the tenant? *Philanthropist*. [Such questions can be only satisfactorily answered by a solicitor. ED.]

THE ORANGE-FUNGUS ON ROSES.—"Wild Rose's" experience of the sudden attacks of this insidious pest is all too common. Its origin and life-history are still more or less obscure, and hence probably its check or cure is still beyond the skill of most growers. Prevention, however, would be better than either. The late Thomas Rivers was one of the first to discover that this pest was most virulent on the rougher-leaved Roses, such as Moss, Provence, and spiny hybrid perpetuals. His advice, too, to intercrop Roses with annuals and other crops, aimed rather at growing out red-rust through an increase of vigour in the constitution of the Rose,

than through any curative virtue in the mere change of crop. In this connection, it should however be borne in mind that our great champion Rose-grower, Mr. Benjamin Cant of Colchester, has long adopted the plan of taking a white or corn crop in alternation to his Roses. Mr. Rivers' radical trenching and manuring were powerful auxiliaries in keeping the land full of suitable food throughout the season. Sudden checks arising from gluts or scarcity of food, and floods or famines of water, are the most potent causes or sure forerunners of red-rust on Roses. Excessive and sudden changes of temperature, from extremes of cold to heat, often come immediately before, if they do not produce and foster, the growth of orange-fungus. A loose surface among Roses throughout the growing season is the nearest antidote yet found for the prevention and cure of red or orange-fungus. The intervention of a white crop, the constant use of the hoe on the surface, to keep the roots cool and moist, sweetly and regularly fed, are useful helps. Like "Wild Rose," I have long known that the red-rust seldom or never attacks Teas, Hybrid Teas, Noisettes, Bourbons, Chinese or Banksian, or smooth shining-leaved Roses. Even such Perpetuals as *Boule de Neige*, the *Verdiers*, and other more or less smooth and shining-leaved hybrid perpetuals escape the orange-fungus. Can it be that this pest cannot lay hold of or remain long enough upon the leaves to effect its reproduction? Suppose we try to starve out this fungus by offering it nothing to feed upon but smooth semi-shining varnished-leaved Roses. We need not lose so very many of our very best Roses by adopting such a method. New and smoother-leaved varieties will come at the cultivator's and hybridiser's bidding as readily as new colours, forms, [odours, among our Rose blooms. Little progress has been made for many years in attempts to kill the orange-fungus without injury to the Rose-trees. For example, *Paris Green* and *London Purple* may be used strong enough to kill the fungus, but hardly without scorching, disfiguring or killing the foliage and flowers. A small brush dipped in pure alcohol, methylated spirits, or a strong decoction in solution of smelling-salts deftly and lightly thrust against the fungus, will cripple or kill it, and if cleverly managed, will inflict but little injury on leaf or branch. But should wider experience prove all smooth-leaved Roses fungus-proof, complete deliverance from this pest may be said to be already within sight of cultivators. For every day Teas, hybrid Teas, and climbers are increasing, while the hybrid perpetuals and other rough-leaved rust-inviting Roses are decreasing. D. T. Fish.

CUTTINGS UNDER GLASS, ETC.—It is well known to gardeners and propagators that to be successful in rooting the green growth of hard-wooded plants in propagating-cases or heated houses, the cuttings must be taken from plants growing indoors; but what is the scientific explanation of the difference between such and plants in the open air? The same difference is very apparent also in grafting most deciduous subjects in heat. *Propagator, Cheshunt*. [Cuttings under glass have relatively more cellular and less fibrous or woody tissue than cuttings grown out-of-doors; the structure therefore is more favourable to the formation of callus and of roots. Again, the higher temperature of the propagating-case is more propitious to the growth of roots than is the temperature out-of-doors. ED.]

WATERPROOF PAPER.—I have great pleasure in forwarding you a sample of the Eureka transparent waterproof paper. I should have done so before if I had not been unwell all last week. I will at the same time give you a few particulars re this paper. It is treated with a chemical preparation, which renders it, as you will see, very transparent; and as the preparation is non-evaporating, it is very durable—with ordinary care it will last two or three years. It has stood the test of very strong winds and rains. With regard to light, I must say that it is excellent, as it transmits sufficient to grow any kind of plant to perfection. I have had Cucumbers, Tomatoes, Ferns, and Aralias under it, and they all thrive equally well. I enclose a photograph of a Cucumber-house, which will give you a good idea of its value. It retains the sun-heat longer than glass, and as much as 120° was registered in the Cucumber-house this summer. As a protection against frost, it is invaluable. During the recent frosts the lowest temperature in the same house was 50°; the sides are built of turf. For Ferns, Palms, or any other plant which delight in a light shaded house, this paper is most economical, as it saves the labour and expense

of shading. The cost of the paper per 100 feet run, viz., 1600 square feet, is 38s. 6d., and the whole house can be built for £6. It is my intention to put up 2000 feet run early next spring, chiefly for Cucumbers and Ferns. C. A. Christiansen.

CHRYSANTHEMUM MRS. G. GRUNERWALD.—As a bedding-plant this splendid summer and autumn flowering Chrysanthemum has been one of the best plants of the season, and has presented a mass of flower during the months of July, August, and September, and at this date is quite as beautiful as ever. It will last until cut down with frost. There is a bright future for the summer and autumn flowering Chrysanthemums as bedding-out plants. J. Grieve.

PLUNGED POT PLANTS.—Concerning these plants at Sandhurst Lodge, Berks, referred to at p. 257, Mr. Townsend, the gardener, has written stating that, having had three successive white frosts of 3°, 5°, and 7°, he had found Fuchsias, Begonias, Heliotropes, Pelargoniums, and some other plants quite spoiled, whereas plants usually esteemed to be even more tender, such as *Solanum jasminoides*, a lovely thing in pots trained standardwise; *Swainsonias*, *Habrothamnus Newelli*, *Bougainvillea Sanderi*, and *Cobaea scandens* were unharmed, looking quite fresh and gay. Besides the plunged pot plants referred to, the frost had quite spoiled the ordinary bedding plants. Perhaps because of this evidence as to comparative hardiness, some gardeners may be disposed to give the plants named as escaping injury a trial for bedding purposes. A. D.

RANUNCULUS LYALLI.—The result of an experiment in importing *Ranunculus Lyalli* may be of interest. Sixty plants were packed in earth in a Warden case by Adams & Son, Christchurch, New Zealand, last April or May. Instead of forwarding while the crowns were dormant, they delayed them until July, by which time all had started into vigorous growth. The result is that sixteen were dead, seven doubtful, and thirty-seven are alive and well. A. K. Bulley, West Kirby.

THE CRYSTAL PALACE FRUIT SHOW.—If the Royal Horticultural Society had no other claim on the nation in relation to horticultural work than what is evidenced by the great annual fruit show of home-grown produce, it would still be entitled to great consideration. But seeing that it does every year accomplish so much, and has so largely the confidence of the horticulturists of the kingdom, because of its great work and reputation, it does seem incomprehensible that it should be left to fight as it were single-handed, the great battle of fruit improvements, and that it has received no support in its work from the Government, the County Councils, or even that peculiar body the Fruiterers' Company. In referring to this latter organisation which has so proud an appellation, I remember that there are some whom I highly esteem who are members of it. But with all respect to them, I can but ask why is it not very greatly in evidence, and giving also very material assistance when the Royal Horticultural Society organises these great exhibitions of fruit at the Crystal Palace, of which the late one was far from being the least. If a body of this nature enjoys a pretentious title, let it show that its title is not an empty sound, but that it has the appellation because of its great services to the cause of fruit production at home. But it may well be asked—What of the Government as represented by its Agricultural Department? Is not fruit-culture an important land industry, and as worthy of national support as is the production of Wheat, cattle, or horses? It may be that this Department is so overloaded with responsibility respecting the muzzling of dogs, that it has no time to devote to the consideration of fruit-culture. Of course, I am not oblivious of what it has attempted to do in a somewhat alarmist way in the diffusion of tracts re insect and fungoid pests, but these indictments in any case defy the Department, and are rather more active now than before. If the Department could place a couple of hundred of pounds at the disposal of the Royal Horticultural Society in encouragement of fruit-culture, if but in the form of prizes at its great national fruit-show, some good would be done, and we should then see governmental recognition of the principle that fruit-growing at home is a very important national industry, and merits all possible support. Cannot the various county councils of the kingdom be induced to vote from their Technical Education Grants a sum of £10 each to provide prizes in a class

for hardy representative fruits from each particular county? What wonderful help to the Royal Horticultural Society and its great Fruit Exhibition might be given in this way, and how much more fully might be illustrated the general nature of county fruit-culture, than can be discerned under the present grouping system, which all the same presented a considerable advance on the former state of having no county or district representation whatever. Then, there are the various vegetarian societies, which should be ready to support the great fruit show. Where in all the Kingdom could be found a finer representation of the fruits of the earth such as the vegetarians specially favour as food, than was the Crystal Palace Show. But recently the vegetarian forces assembled at a banquet at the Palace, could they not be induced to hold their annual congress at the same time as the fruit show is held, and thus enable the members of the body from all parts of the Kingdom to see what British fruits really are. Possibly, were the President, Mr. A. F. Hills, of Monkhams, Essex, a fellow of the Royal Horticultural Society, specially approached, he might secure a vegetarian prize at the show annually. It might reasonably be expected that the British fruit trade, as represented by the numerous salesmen, dealers, fruiterers, &c. would also like to lend a helping hand. It should be to the interest of all such to provide the classes for packed fruits with the prizes. There are others also who might help, but I have indicated enough. It is evident that with the immense area of the Crystal Palace at disposal, and everyone has to admit that it is one of the finest places in the world for the purpose, the great annual exhibition of British-grown fruit held there, should be greatly extended and have a prize-list of not less value than £1,000. At present, but for the Royal Horticultural Society, we should have no exhibition whatever. A. D.

APPLES, JAMES GRIEVE AND OTHERS.—James Grieve Apple is a seedling from "Pott's Seedling," and quite distinct from the type of Cox's Orange Pippin, and very much harder, and is in season from September to March. James Welsh (not J. Welch) is a seedling from Ecklinville, and is as free a bearer as Lord Suffield, with the free vigorous habit and growth of Ecklinville. It will be one of our best orchard standards. It is in season from September to December. Bailie Nilson is also an Apple of sterling qualities, and is a seedling from the Gooseberry-Apple; this, and James Grieve, were staged at our September show in splendid form from the Queen's Gardens at Frogmore (gr., Mr. O. Thomas). During my life I have raised upwards of a thousand seedling Apples, and if the later ones turn out as well as the earlier ones, there ought to be a few fine kinds to fruit yet. James Grieve, Redbraes Nursery, Edinburgh.

POLISHING APPLES AT SHOWS.—Prior to the dispersal of the judges to their respective duties at the recent Crystal Palace fruit show, the secretary of the Royal Horticultural Society, the Rev. Mr. Wilks, drew attention to the polishing of Apples seen in many directions, which he advised the judges to be aware of, and to deprecate. That this polishing was very largely to be seen there was ample evidence, but seeing that there was no reference or condition applicable to it in the schedule, the judges could not disqualify fruit so polished found in the competitions. That any sensible fruit-grower should adopt such an unhappy practice is difficult to understand, as the preservation of the fruit bloom in all its pristine freshness should be every exhibitor's aim. But if the council wishes to suppress the practice at its shows, and it would be a proper course to do so, I suggest that in next year's schedule it shall be clearly stated "that any fruits artificially polished will be disqualified by the judges." With such an instruction polishing would immediately disappear. A. D.

SPRUCES DROPPING THEIR LEAVES.—I shall be greatly obliged if you can assist me in a matter which is troubling us over here this season. Nearly all the plants, both young and old, of *Picea excelsa* appear to have been attacked by disease in the counties of Wicklow and Dublin. About May or June the leaves turned brown, and became infested with insect pests, and when a branch was shaken nearly all the leaves dropped off, thus leaving the trees naked and desolate before new growths appeared. The new growths were weak and poor, but they have good buds, so that the trees may survive. The spring was harsh, and growth late. Can you inform me if this disease is known, and if so, what is the cause of it? M. [The young twigs sent were perfectly healthy. Two fine plants of *Picea pungens glauca* in our own garden have dropped their leaves in the same way. We

believe this to be a normal process, accelerated by the hot dry season, which has favoured red-spider and other pests. The stems are likely to be more or less bare in consequence, though new growths may be formed on a small scale. Ed.]

EUGENIA UGNI (p. 259).—This is quite hardy in the open border at Redbraes, and has fruited abundantly for a great number of years. It is also one of the best wall evergreens, and quite the hardest of the Myrtle family; but, strange to say, it is little sought after, and appears to be very little known by the generality of gardeners. J. Grieve.

BIRDS AS GARDENERS' FRIENDS.—In one of the leading papers (*Morning Post*), is an article referring to the destruction of birds. Whoever the composer of the article may be, he has never had much experience of the destruction birds do where their numbers are large. He considered all birds were great helps to the gardener in clearing away insect pests. I admit insectivorous birds may do some good; but I find in this neighbourhood where birds abide in hundreds of all classes, from a robin to a wood-pigeon, that I cannot speak very highly of their assistance, for I have had winter produce, Brussels-sprouts, Broccoli, Kales, &c., literally swarming with caterpillars and fly, which would have rendered the plants useless had they not been checked by hand. The birds did not take the slightest notice of the insects, but would swarm down on the Peas and seeds, and they spoilt a quantity of the best Carnation-blossoms while in the bud. They also cleared away Mountain Ash, and other ornamental berries which help to make our gardens look cheerful in late



FIG. 80.—THE HOGG MEMORIAL MEDAL.

autumn and winter, as soon as they were coloured. Had our friend been handicapped to the extent that a great many gardeners are in preserving their crops, he would not speak so highly of the birds. S., *Abbey Wood*. [Many people prefer the birds, which they cannot purchase, to the crops, which they can buy. Ed.]

FROST IN SHROPSHIRE.—We experienced a rather severe frost in Shropshire on Sept. 24, which did a great deal of mischief amongst the tenderer varieties of flowers and vegetables, especially in some localities. It is interesting to notice the effects in the different localities. All parts of Shropshire were affected more or less, but in some places the frost was exceptionally severe. I enclose some specimens of branches of Walnut, Laurel, and Chrysanthemums from Col. Lloyd's garden, Ashton Hall, Oswestry, injured by frost on the above date. The Walnut was only a side-branch, the branches and Walnuts on the tops of the trees were completely blackened. The Laurel is a fair illustration of the whole sweep of Laurel shrubbery, scarcely a tip of the young growths escaping. The loss amongst the Chrysanthemums was very great. Many have to be cut down. Mr. Thompson, a well-known exhibitor in these parts, had some splendid plants sending up some fine exhibition blooms, and very many are injured, although he had protected them with tiffany. It is noticeable that only the unopened buds are injured, the open flowers escaping. All the bedding plants, Pelargoniums, Heliotropes, Begonias, Dahlias, &c., are completely spoilt. The gardens were beautiful before this very early sharp frost came so unexpectedly upon us. Alfred Gault, Shrewsbury.

THE HOGG MEMORIAL MEDAL.

(SEE FIG. 80.)

AFTER the death of Dr. Robert Hogg, a movement was set on foot to obtain subscriptions from those who valued this eminent pomologist's services, to obtain a medal to be given for meritorious exhibits of hardy fruits. The necessary amount was collected, and Mr. Harry J. Veitch, and the Rev. H. H. d'Ombrain were appointed to make the necessary arrangements. A suitable die was obtained, and placed in the hands of the Council of the Royal Horticultural Society. Two of these medals were awarded last week on the occasion of the fruit show at the Crystal Palace: one to Messrs. T. Rivers & Son, Sawbridgeworth, and the other to Messrs. Jas. Veitch & Sons, Chelsea; in each case a most appropriate award personally, as well as from the exhibitor's point of view. The Society will continue to issue the medals at their discretion, as in the case of the Banksian and other medals.

SCOTLAND.

PERENNIAL ASTERS.

So largely are "Starworts" affected by climate and locality, that in Scotland the flowering of late sorts does not occur in some years at all. Indeed, the indefiniteness they show in this respect drives us to dispense with the latest flowering sorts. The other day in the Royal Botanic Gardens, Edinburgh, I was shown an up-to-date collection, in which some of the sorts were less tall than our own, while almost all of them flowered earlier. I was, however, under the kind direction of Mr. Waite, enabled to procure the names of a number of sorts that I shall be glad to add to our already fair collection. The following include those I saw in Edinburgh, and have experience of here, and in other gardens.

There is nothing finer than *Aster Amellus*, hoary with age, but still as beautiful as the youngest. There are several varieties, but none, as I think, that surpasses *bessarabicus*. The flower is not gay, nor is it dull, but a restful shade of purple-lilac, and with a centre of orange florets. Perhaps equal in beauty is *longifolius* and its variety *formosissimus*, both of which are popular wherever hardy flowers are cultivated. Next in order is the very beautiful *Novae-Angliae*, var. *Wm. Bowman*, a variety that never fails to open its flowers here. *N.-A. roseus* and the type unfortunately do not flower successively every year. They succeed best in a dry, warm soil, and from plants grown in such I have frequently cut blooms in November.

Acris is a pretty and good variety, which in the garden of the leader of the House of Commons at Whittinghame, is effectively employed. *Stricta* bears a resemblance to *Acris*, but I thought it better than that variety. A dwarf species named *spectabilis*, not unlike *Amellus*, which Americans mistake for it, is well worth growing. In *japonicus* we have a species of rather quaint appearance, but nevertheless pretty.

Of the large group now composed of *Novi-Belgii*, I imagine the best are to be found in *Arcturus*, *superbus*, and *Purity*, to which, on account of blooming somewhat earlier may be added *Lady Trevelyan*. *A. versicolor*, somewhat like the two last-named, but later to bloom, is a commendable species.

There is room in most gardens for a number of each of such dwarf species as *Curtisii*, blue; *ptarmicoides*, white; and *linarifolius*. Of the sturdy puniceus, the variety named *lucidulus compactus* is a valuable improvement. *Multiflorus*, *elegans*, *carnosus*, are very common sorts, and to these I shall add only a very few more. *Vimineus*, and its variety, *Cassiope*, and *White Queen*, are invaluable, and nothing at this time of year surpasses in beauty this charming trio. *Ericoides*, in some respects less beautiful, is nevertheless indispensable, because it blooms later in autumn, and its star-like little flowers are very pretty indeed. I also like to grow the species *John Tradescant* brought from Virginia, and named *Tradescanti*, because to it the designation of *Michaelmas Daisy* was long solely

applied. Lastly, we have the medicinal *Linomyrs*, now one of the prettiest of autumnal flowers.

Starworts need little attention. In the case of a very few varieties is support needed, and for those that do need it, a strand of string tied round the soft stalks is generally sufficient; once the stalks have hardened, the strings may be dispensed with, and the shoots allowed to spread out naturally. Starworts may be lifted and transplanted with safety at any time of the year, save during winter; hence the plan of growing a few plants in reserve, in order to fill blank spots in mixed borders in autumn, is one to be commended.

BRAMBLES.

A slight discussion has lately occurred in one of the leading Scotch dailies as to the value commercially of the common *Rubus fruticosus* when cultivated in gardens. Notice was also taken of the Bramble having been for a long period cultivated on walls. There is nothing very novel in either case. In very many gardens in Scotland the Bramble is cultivated, though not often, for the sale of the fruit, but commonly for supplying the household. On walls they are seldom to be found, and are grown for the production of dessert fruits. The Parsley-leaved variety is better than the common form, but where the former cannot be had, the latter may be used as a good substitute. [See also p. 275. Ed.]

THE WINEBERRY (*RUBUS PHENICOLASIUS*)

is comparatively a novel fruit; its qualities having been first discovered in America. Here its progress has been slow. Nevertheless, it is worth cultivating. A delicious jam, thickly sprinkled with its white seeds, is made from its fruit. Here it is much esteemed when used in the same way as the Bramble, either as a tart by itself or mixed with Apples or Currants. As a rule, it comes into use when Brambles are over, but this year the fruit was nearly used up when the Brambles began to ripen. The Wineberry suffers much from drought. It requires good cultivation, and about this time of season it must be pruned, by cutting back the stems that have fruited near to the ground, also all weakly growths. At the same time the young shoots of the current year should be shortened according to their strength. I grow a fair number in the gardens and pleasure-grounds, and can recommend them.

A NEW GRAPE.

The Forth Vineyards, Kippen, under the management of Messrs. D. & W. Buchanan, has for several years enjoyed a reputation for its Tomatos and its Grapes. Its reputation, moreover, may soon be further increased for its seedling Grapes, the first of which was presented at the Royal Caledonian Show, Edinburgh, and under the name of "Diamond Jubilee" it was awarded a First-class Certificate of Merit. Its history is brief. In 1894 four flowers of *Gros Colman* were fertilised with pollen from *Gros Maroc*. The next year the seeds were sown, and in 1896 the year-old seedlings were inarched on fruiting canes of Black Hamburgh. Next year the variety fruited, and because of the year it was named "Diamond Jubilee." This is the best variety that has as yet appeared among the seedlings. The Messrs. Buchanan, in a note, say, "It is a free cropper, sets splendidly; the flavour is good, and the Vine has a good constitution." Last year it kept till Christmas, but if grown in a warmer temperature it is expected to keep longer, and to be improved in flavour. *R. P. Brotherston.*

BELGIUM.

I LATELY noted a new hybrid at the Horticulture Internationale, Brussels, which will take a foremost place among beautiful Orchids. This was *Cypripedium Wiertzianum*, from C. Rothschildianum x *barbatum superbum*. The lip and petals clearly show the Rothschildianum parentage, the standard that of *barbatum*, but it is larger than that of the latter. This hybrid has been two months in flower; the plant is robust, the flower strong and vigorous.

The *Catasetums* are coming into bloom; C. Lin-

deni, splendens punctatum, and Aliciae are delightful among the many forms of *Bungerothi*.

There are now also numerous handsome varieties of *Lælia præstans*, of fine colouring and exceptional size in the flower. I may mention L. p. *Lindenii*, remarkable for its unusually deep colouring and velvety texture—the lip is nearly black, especially towards the upper edge; L. p. *fastuosa* is paler than the above, though still dark—the lip is particularly deep and handsome; L. p. *nobilis*, flower very large, two of the petals measuring 1½ inch across; L. p. *grandiflora*, flower large, paler than the above, the lip ample, the throat tinged with lemon-yellow, in the middle of the purple blade is a large white spot—the habit of this variety is excellent; L. p. *formosa* is of fine habit, the lip dark, throat cream-white; L. p. *mirabilis*, dark in colour, throat cream-white; L. p. *majestica*, petals of good size, and lip almost wholly dark.

There are also in bloom, *Cattleya Warjenowskyana*, lately figured in the *Lindonia*; it bears three very good flowers. *Vanda tricolor Hoveæ*, a unique specimen also illustrated, and now bearing one fine raceme of characteristic flowers; *Oncidium luridum splendens*, a charming variety; *Vanda Sanderiana*, unusually dark; and many fine specimens of *Cattleya Harrisonæ* of rosy tints from pale to dark, the lip in some a beautiful creamy-white. *Ch. de B.*

FLORISTS' FLOWERS.

CHRYSANTHEMUM NOTES.

ALTHOUGH it is somewhat early to judge the character of this season's novelties, I have recently seen a few that will doubtless be exhibited at forthcoming shows. General Paque (Calvat, 1898) may best be described as an improvement on *Golden Gate*; some fine flowers on crown buds were perfect in size and shape. Its colour will prove useful as an exhibition variety, being clear tawny-yellow. The growth of the plant is vigorous, whilst its earliness will render it exceedingly useful.

President Bevan (Calvat, 1898) is a fine Japanese incurved variety; the flower is of good size, solid, and perfect in shape, while its colour is clear buff-yellow. In character it is very distinct.

Mrs. E. Carter is a new Australian variety; the flowers are of good size, perfect in shape and form. The florets are long, slightly incurving towards the centre, and in colour are of a lovely clear yellow shade. It is of good habit, with a vigorous constitution, and the flowers I saw from crown buds were very fine.

Of last season's novelties now in flower, the best is *Madame G. Bruant*, an improvement on *Etoile de Lyon*. When exhibited last season, this variety was much admired. The flowers on crown buds are very large, and in colour bright rose, with deeper margins; the petals are long, and have a silvery-pink reverse. It is perfect in shape and form, dwarf and vigorous in habit, and will rank as a standard variety.

International, although an old variety, is worthy of mention on account of the variability in the colour of its flowers, according to which bud be "taken." The question of "taking" the proper bud is in a great measure the secret of success. On first crown buds the flower is a beautiful creamy-yellow, which is not its proper character. From the second crown buds the flowers are white, tinted rose; while from terminal buds the flower becomes almost of "incurved" form, and variously tinted. *E. S. Woking.*

NURSERY NOTES.

MESSRS. BLANDFORD, OF BLANDFORD.

MESSRS. BLANDFORD have land at several places in the neighbourhood of Blandford, Dorsetshire. The grounds adjoining the seed-shop and glass-houses are devoted principally to small shrubs, herbaceous plants, Carnations, &c. Among the shrubs I noticed recently were numerous and well-grown medium-sized specimens of *Ginkgo biloba* (*Salisburia adiantifolia*), ranging from 8 to 10 feet in height; these are

among the cleanest and best plants I have seen recently of this species. There is also a grand specimen 45 feet high, well proportioned, and of capital colour. Close to these were two other large trees, one a Weeping Lime, 60 feet high, and as much in diameter; and the other a Weeping Ash. Earlier in the season Messrs. Blandford cultivate a fine lot of *Gloxinias*.

Both single and double-flowering tuberous *Begonias* are grown in large numbers, and among the doubles were remarked some fine varieties. A single-flowered one had appeared, with intensely dark purple blooms, and was being carefully preserved to ripen its seed.

Pot-Roses are a great feature, *Maréchal Niel*, *W. A. Richardson*, *Gloire de Dijon* making rods 8 and 10 feet in length. The work of budding is performed in July in the open beds. The plants are lifted in November, potted and stood in cold frames, so that the buds do not make any growth. Early in the spring they are placed in the greenhouses, where they remain for a period of four months; during this time no fire-heat whatever is given. The growths are stout and clean, and progress rapidly with sun-heat alone. During the summer months, when growth is well advanced, the plants are removed out-of-doors, the rods having attained the before-mentioned length, some even reaching longer than the 10 feet. These are securely fastened to stakes.

Border Carnations, and those of the *Marguerite* and *Malmaison* type are grown in large numbers. *Chrysanthemums* are cultivated chiefly as bush plants. The double white *Primula* is much in request here, and the old plants are soiled round in March and April. Root-action soon takes place, and during May the plants are divided and potted-up into 3-inch pots. They have since been removed into 5-inch pots, in which they will flower during winter. Mrs. Leopold de Rothschild *Carnation* is a great favourite. I noticed here the *Cramoisiée supérieure China Rose*, most vivid in its deep crimson, very showy and attractive. Another plot of land near by is full of choice shrubs, ornamental trees, shrubby *Spiræas*, *Prunus Pissardi*, &c.

The nursery on the Dorchester Road is devoted to Roses. Breadth after breadth of plants may be seen. The saleable plants of H. P. and dwarf Teas were carrying splendid blooms of vivid colours. Mrs. Sharman Crawford, *Merveille de Lyon*, *Baroness de Rothschild*, *La France*, Mrs. J. Laing, and in fact every good old variety was included; also *Margaret Dickson*, *Marchioness of Dufferin*, *Marchioness of Londonderry*, *Marchioness of Downshire*, &c. *Blairi No. 2* is not by any means overlooked. For most of the H. P.'s the *Manetti* and the French *La Grifferaie* stocks are used, whilst for the Teas the old Dog Rose is more often brought into requisition. In addition to the Roses young Spruce-trees are grown by the thousand, which are supplied to the trade. Ash, Hazel, young Oaks, Beech, in fact all sorts of evergreen and deciduous trees have separate quarters. The generally healthy condition of everything in the grounds was noticeable. *W. Swan.*

MARKET GARDENING ABOUT RAYLEIGH.

HARDY fruit and vegetable growing has been carried on successfully for many years back in the parishes of Rayleigh, Hockley, Eastwood, Prittlewell and Hadleigh. The produce finds a ready sale in the flourishing and rapidly-growing town of Southend, which is within easy reach of the several parishes. The most extensive fruit farm in Rayleigh parish is Weir Farm. Here Mr. Newman has combined farming with fruit and vegetable growing, and with the result that in each succeeding year more space is devoted to the production of fruit and vegetables.

Mr. Newman grows 12 acres of Black Currants, 6 acres of Raspberries, 8 acres of Strawberries, 4 acres of Gooseberries, and 4 acres of young Damsons, and this autumn he intends planting a few acres with Apple-trees. Norwich Wonder Raspberry is the

variety depended upon by Mr. Newman. As grown at Weir Farm, under generous treatment, it is a prodigious cropper and free grower, the fruit being fine in size and of good flavour. This year the plants have made good strong canes, notwithstanding the unusually long period of drought and tropical heat which we have experienced. A heavy dressing of good farmyard manure is ploughed into the ground intended for Raspberries, Currants, Gooseberries, and Strawberries. In some cases the land is ploughed once before laying on the manurial dressing, which, as already stated, is then ploughed in and well harrowed and rolled before planting the canes in rows 5 feet apart. The plough and horse-hoe are run between the individual rows of canes several times in the year. Mr. Newman has great faith in the efficacy of sprats as a manure, and these are applied to the ground cropped with Raspberries, Gooseberries, and Currants, at the rate of $1\frac{1}{2}$ tons per acre. In the case of Raspberries, a furrow is opened pretty close to the canes on either side the several rows, into which a good dressing of the sprats is put, the soil being returned to the furrows by the plough on the return journey. In the case of Gooseberries and Currants, a trench is opened round them, about 1 foot from the stems, for the reception of the sprats, the soil being afterwards filled in over the manure. An acre of Raspberries thus treated will produce from fifteen hundred-weight to one ton of fruits per acre annually in the absence of spring frosts. All the old canes are cut out every autumn to make room for the canes of the current year's growth; and these, where too numerous, are thinned out and transplanted into ground prepared as described above. The gathering of one ton of Raspberries or Strawberries will cost from £6 to £7, according to the weight of crop, being at the rate of from one halfpenny to three farthings per lb. Currants if the crop be heavy cost 7d. per 24 lb. to pick; if light, 8d. Gooseberries cost about 6d. per 28 lb. for gathering good average crops of, say, three tons per acre.

Mr. Newman allows a space of 5 feet between the rows for Gooseberries and Currants, and the same distance from bush to bush in the row; the plants being set square in all the rows, so as to admit of the horse-hoe or cultivator being run between them both ways (north and south, and east and west) in turn.

Other crops, such as Cabbage, Lettuce, and Cucumbers, as well as Vegetable-Marrows, are grown between the rows while the bushes are young and comparatively small. Two rows of Cucumbers (Stockwood) are grown between the rows of young Gooseberries and Currants, the seeds being drilled in; 5 to 6 lb. of seed being required to sow an acre. Mr. Newman grows four acres of Ridge Cucumbers, but he says it is the most uncertain of all outdoor crops, so much depending upon the weather during the plant's growth. The heaviest crop he has ever picked was six tons per acre. This fine crop was secured from plants growing in fairly deep soil, light in texture, and rendered rich by a liberal dressing of good farmyard manure. Sufficient rain fell in the earlier stages of the plant's growth, and there was high temperature. The plants were well established within two or three months from the time of sowing the seed (which was done in April).

Strawberries are grown in rows $2\frac{1}{2}$ feet asunder, and the plants are ploughed into the ground after three crops of fruit have been taken from them. This year the crops were magnificent in weight, and the size of the berries was good. Laxton's Noble and Sir Joseph Paxton are the only varieties grown.

Several acres of land are devoted to the growth of Cabbages, Savoys, Cauliflowers, Beans, Lettuces, &c., for supplying Southend and Stratford markets.

In addition to fruit and vegetable-growing, Mr. Newman grows 3 or 4 acres of Carrots and 6 acres of Cabbages for seed; and early in the present year he erected a cucumber-house, and from which he has taken two heavy crops of excellent fruit—that is, he exhausted one lot of plants, which he pulled up, and replaced with young plants, and with such satisfactory results, that he is now erecting a much larger house. Mr. Newman freely imparts his valuable experience to those practising, or about to practise, the same business. *H. W. Ward, Rayleigh.*

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 22.—Present: Mr. G. Shorland Ball, chairman; and Messrs. G. W. Law Schofield, J. Leemann, H. Greenwood, A. Warburton, W. Bolton, J. Cypher, R. Johnson, and T. Mills (Hon. Sec.).

First-class Certificates were awarded to *Laelia Cattleya* × *elegans* *Statteriana*, from THOS. STATTER, Esq., Whitefield (gr., Mr. Johnson), and to *Cattleya Hardyana*, from JOHN LEEMAN, Esq., Heaton Mersey (gr., Mr. Edge).

The following plants were recommended Awards of Merit:—*Cattleya granulosa aurea*, from THOS. STATTER, Esq.; *Cypripedium Marshallianum*, from H. GREENWOOD, Esq., Haslingden (gr., Mr. Gill); *Cattleya Gaskelliana*, from JNO. LEEMAN, Esq.; *Laelio-Cattleya* × *Nysa*, from R. ASHWORTH, Esq., Newchurch (gr., Mr. Pidsley); *Cattleya gigas*, from W. BOLTON, Esq., Wilderspool (gr., Mr. Cain); *Oncidium Forbesii* *superba* and *Phalanopsis Highburyensis*, from Mr. J. CYPHER, Cheltenham; *Laelio-Cattleya* × *intermedio-flava*, from Messrs. HUGH LOW & Co., Clapton, London; *Cattleya Massaiana*, High View var., and *Laelio-Cattleya* × *elegans* *Lawrenceana*, from Mr. KEELING, Bingley; *Oncidium incurvum album*, *Cattleya Eldorado alba*, and *Cypripedium* × *Lilian Greenwood*, from Messrs. CHARLESWORTH & Co., Bradford.

A Cultural Commendation was awarded to Messrs. CHARLESWORTH & Co., for *Oncidium incurvum album*, and Silver Medals to W. BOLTON, Esq., and JOHN LEEMAN, Esq., for groups of Orchids.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 25.—A meeting of the Floral Committee was held at the Royal Aquarium on the above date, Mr. THOMAS BEVAN presiding. The attendance was small.

Mr. W. WELLS, Earlswood, Redhill, had an early Japanese Chrysanthemum named *Crimson Pride*, the colour deep chestnut-crimson, with a brownish-buff reverse. Mr. Wells stated that the dozen or more blooms exhibited were cut from plants in the open air. The height of the plant is $2\frac{1}{2}$ to 3 feet. It was commended. Mr. Wells also had a second sport from the deep lilac *Gustave Grunewald*, rosy-salmon in colour, with a slight orange base, paling to yellow in the older flowers; but the committee thought it came too close to *Louis Imaire*, a sport also from *G. Grunewald*, recently certificated by the National Chrysanthemum Society and the Royal Horticultural Society.

Mr. J. H. WITTY, Nunhead Cemetery, sent some plants lifted from the open ground of a singularly dwarf early-flowering variety named *Norbet Purrez*, of a kind of reddish-salmon or coppery-red colour, very free and scarcely more than 12 inches in height. Mr. G. THRUSSELL, Fairmead Nursery, Cheshunt, sent *Yellow Queen*, a clear yellow sport from the white *Queen of the Earlies*, but it was not in good condition. Mr. H. J. JONES, Ryecroft Nursery, Lewisham, sent early-flowering Japanese *Soleil d'Octobre*, a pale yellow flower, with rather drooping broad florets, which failed to gain enough votes to secure an award as an exhibition variety for October. Mr. R. BURGIN, of St. Neot's, and Mr. R. PINCHES, Crown Street, Camberwell, both sent new designs in exhibition tubes, but the were regarded as no improvement upon those already in use.

DEVON AND EXETER GARDENERS'.

SEPTEMBER 28.—The annual meeting was held at the Guildhall on the above date.

The Committee, in their annual report, stated the papers dealt with during the autumn session included such subjects as, "The Qualifications and Duties of a Gardener," "How a Knowledge of Botany is a help to Gardening," "Pruning and the General Management of Fruit Trees," "Herbs, their Cultivation and Uses," and in one or two cases they were made more interesting by practical demonstrations. Following the friendly supper at Christmas, the spring session was opened with a paper entitled "Himalayan Rhododendrons." Then followed a valuable contribution on "Orchid Growing," also papers upon "Four years' experiments in the cultivation of vegetables with and without chemical manures," "Potatoes," "Variety in the Flower Garden," and "Summer Bedding." The summer excursion was to Endsleigh, near Tavistock, the seat of his Grace the Duke of Bedford. The Committee wished to place on record the kindness shown by the President (Mr. E. A. Sanders) and his Worship the Mayor of Exeter. The service rendered to the Association by the Mayor in granting the Council Chamber for the meetings was of the greatest value.

The Hon. Treasurer's report showed a balance in hand of £13 11s. 3d. Messrs. Hope and Mackay were re-elected Hon. Secretary and Treasurer respectively. The Chairman drew attention to the interesting programme of lectures arranged in connection with the Association for the autumn, and suggested that investigations should be made of the qualities and capabilities of different earths, and the plants which they best suited. He looked forward to the time when people would not be using cartload upon cartload of material, but simply the essential earth, &c., which different plants required.

The subjects for consideration during the coming autumn session are as follows:—"Flowers that Bloom in the Spring,"

by Mr. Andrew Hope; "Vine Culture," by Mr. George Lock, Newcombes Gardens; "Deciduous Trees," by Mr. F. Edwards, Honeylands Gardens; "Further Experiments with Chemical Manures applied to Garden Crops," by Mr. F. W. E. Shrivell, F.L.S., Thompson's Farm, Tonbridge, Kent; and "The Honey-Bee, and why it should interest Gardeners," by Col. Walker, Lee Ford, Budleigh Salterton.

WARGRAVE AND DISTRICT GARDENERS' IMPROVEMENT.

SEPTEMBER 28.—At the ordinary monthly meeting, held on the above date, Mr. W. H. Scott, gr. to Capt. COLERIDGE, Twyford, read a paper on "Tomatoes." Full cultural directions were given for raising this popular crop, in houses and out-of-doors. Boxes were recommended in preference to pots. The object in any case must be to keep the roots near the surface, and to get the largest amount of Tomatoes from the smallest amount of wood. The various diseases of the Tomato plant were referred to, and the best methods of treating them.

Mr. W. BAZELEY, nurseryman, Twyford, exhibited well-grown specimens of the following Tomatoes:—*May's Favourite*, Conference, Rochford's, and *Chemin Rouge*. Messrs. T. Haskett, W. Scott, and W. Bazeley were appointed judges for the ensuing month. Mr. W. Pope, gr. to J. P. WHITE, Esq., exhibited a fine collection of Crotons; and Mr. SCOTT was awarded a Certificate for a new *Cactus Dahlia*.

SEED TRADE.

THE LINCOLNSHIRE SEED CROPS.—Lincolnshire, Cambridgeshire, and Essex are among the leading counties in which seed growing is carried on upon a large scale. The rich fertile loam of the former county is well adapted to the purpose. Messrs. W. W. Johnson and Sons (Limited), of Boston, are large growers of seeds in the county of Lincoln, and on the occasion of a recent interview with Mr. Alfred Johnson we were able to glean some information, which, coupled with the conclusions arrived at from personal observation, enable a pretty accurate forecast to be made as to the probable yield of the seed season.

Peas.—This important crop suffered from the cold and treacherous weather which prevailed in May and June. Many of the blossoms fell before they became fully developed, and a large proportion of the pods were either sterile or contained but few Peas. The general crops are likely to be unusually light, the seeds small and dry, but of a good colour.

Broad Beans.—These show a good average crop, well harvested, the produce fine in colour, though smaller than usual in size. On the deep fertile Lincolnshire loams Beans are persistent, but the long-continued droughts told upon the crop, there being such an unusual scarcity of rain.

Brassicas, Cabbage, Kail, Broccoli, &c.—The average crop of these is a medium one, but the seed is of fine quality.

Carrot.—This crop, even in the holding soil of the county, has generally suffered from the drought, and the yield in bulk will prove disappointing.

Mustard.—Lincolnshire and Cambridgeshire are renowned for their plantations of Mustard, and when several acres are in full bloom the rich golden sheen of the blossoms is very striking. Large breadths of White Mustard have been harvested, and the crop is an average one, the seed small in grain but of good colour. Larger breadths of Brown Mustard have been grown than for some years past; the crops are generally good, and it is expected the samples will be of fine quality.

Rape.—But limited breadths of this were sown, but there is promise of a good yield.

Agricultural Root Seeds.—Of Swedish Turnips smaller breadths than is usual were grown, and early in the season the yield was promising, but early threshings prove that the crops are much smaller than was estimated. Of Turnips there was this season but a small breadth of the white-fleshed varieties, which gave promise of a moderate yield. Yellow-fleshed Turnips have done better than usual, and although but a limited breadth was planted for seed, there is the promise of a full average crop of good quality. Of Mangel Wurzel there was also a small breadth planted, and the yield is expected to be an average one. It is of fine quality owing to the crops having been harvested in good condition. *Pisum*.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					10ths Inch.	Ins.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
	Above (+) or below (-) the Mean for the week ending October 1.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 2, 1898.	Below 42° difference from Mean since January 2, 1898.				
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	Day-deg.				
0	1 +	50	0	+ 228	- 232	5	+ 191	42.1	19
1	0 aver	51	0	+ 163	- 226	2	+ 145	18.9	16
2	1 -	64	0	+ 222	- 216	4	- 124	13.9	26
3	2 -	68	0	+ 179	- 207	5	- 108	13.0	47
4	3 -	65	8	+ 166	- 208	1	- 112	13.5	40
5	1 -	81	0	+ 243	- 243	1	+ 102	12.5	46
6	1 -	57	0	+ 236	- 217	4	+ 166	30.4	13
7	2 -	62	0	+ 240	- 244	3	- 139	23.8	32
8	1 -	79	0	+ 274	- 156	3	- 123	20.3	45
9	1 +	70	0	+ 253	- 168	9	+ 176	26.4	35
10	2 +	88	0	+ 361	- 135	3	+ 133	25.9	44
* 1	1 +	112	0	+ 449	- 93	5	- 140	15.7	57

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending October 1, is furnished from the Meteorological Office:—

"The weather continued fine and dry during the earlier days of the period, but subsequently became decidedly unsettled, with heavy falls of rain in the west and north and in parts of southern England. In the east and south-east of England, however, the rainfall was again very slight, and at some stations almost entirely absent. By the end of the week the weather had again become fine and dry generally.

"The temperature was a little below the mean in most districts, but slightly above it in Ireland, as well as in 'Scotland, N.' and the 'Channel Islands.' The highest of the maxima occurred either on September 26 or October 1, and ranged from 69° in 'England, E. and S.W.,' to 61° in 'Scotland, W.' The lowest of the minima, which were also generally recorded on September 26, ranged from 29° in the 'Midland Counties,' and 32° in 'Scotland, E. and W.,' to 37° in 'England, N.W.' and 'Ireland, N.,' and to 49° in the 'Channel Islands.' Some sharp ground-frosts were experienced over the inland districts.

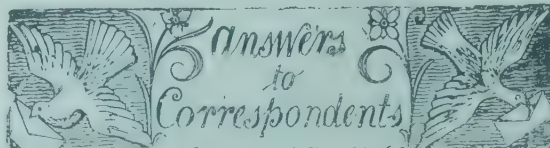
"The rainfall was again less than the mean in nearly all the English districts, but exceeded it in Ireland and Scotland, and also in 'England, S.' In 'Ireland, N.' the excess was very large. The rain on Thursday night was very heavy in the south locally. The greatest falls at any individual stations being 1.58 inches at Shaftesbury, 1.56 inches at Westbourne (Sussex), 1.13 inches at Hurst Castle, and 0.98 inch at Cranley.

"The bright sunshine again exceeded the mean over the greater part of the Kingdom, but was much below it in Scotland, and considerably below it in 'England, N.E.' The percentage of the possible duration ranged from 57 in the 'Channel Islands,' 47 in 'England, E.,' to 26 in 'England, N.E.,' and to between 19 and 13 in Scotland."

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

Do wasps first attack ripe fruits, or do they merely do so after flies have made an opening for them? Do wasps or flies effect most injury upon fruits? T. B. S.



APPLES: H. Irish Peach for September, American Mother and Pine-apple Russet for October, Cox's Orange Pippin for November to Christmas.

BOOKS: Amateur. Your question is too vague to be answered definitely. *Nicholson's Dictionary of Gardening* is the most complete of its kind. It is in four volumes.—G. M. *Bulbs and Bulb Culture*, by D. T. Fish, published by L. Upcott Gill, London. The other work mentioned by you is out of date, and of little value.

GRAPES UNSATISFACTORY: R. F. We suspect the roots of the Vine have penetrated a cold or wet sub-soil, or that the border itself is not perfectly drained. You will do well to look to the roots during autumn, and bring them to the surface as much as possible, where they will be warmer, and in a more convenient condition for the appropriation of food given to them. Beyond providing a proper and nutriment medium for the roots, it is essential to the perfect colouring of Grapes that a dryish and fresh atmosphere be obtained in the house, by free ventilation. The necessary warmth can be maintained by the hot-water apparatus. From the specimens sent, we should not judge the Grape to be Black Alicante.

INSECT: P. H. *Sirex gigas*, the "Wood-wasp," or Giant Sirex. The female generally lays her eggs in Pine or Fir-trees that are past their prime, or from some reason are weak (see fig. 81).

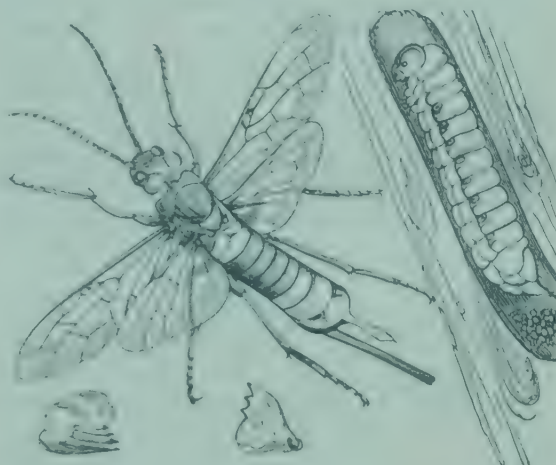


FIG. 81.—SIREX GIGAS.

LAPAGERIAS SPOTTED: S. M. T. The flowers have apparently been injured by the puncture of thrips or other insect.

MANURES: W. H. *A Treatise on Manures*, by A. B. Griffith (Whittaker & Co.). We do not know the price—a few shillings, probably. Most of the books on gardening have a chapter on the subject, and they will probably be more useful to you than any special book.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—T. F. W. The box containing your Pear was quite smashed. You are correct in regard to the name of plant. The J. should have been T.—R. K. 1, Cox's Orange Pippin; 2, Stirling Castle.—P. C. P. Apple, Landsberger Reinette.—Rogers Brothers. Your seedling Apple appears to be New Hawthornden.—J. J. & Co. 1, Beurré Clairgeau; 2, Duchesse d'Angoulême; 3, Vicar of Winkfield; 4, Beurré Diel; 5, Beurré Bosco; 6, Comte de Lamy.—John Kitney. 1, Alfriston; 2, Queen Caroline.—Cecil H. Perceval. 1, Scarlet Nonpareil; 2, Norfolk Beefing; 3, Dumelow's Seedling; 5, Cockpit; 6, Col. Vaughan.—J. L. Newfield. 1, Cox's Pomona; 2, Alfriston; 3, Hawthornden; 4, Brabant Belle-

fleur; 5, Reinette de Caux; 6, Court of Wick.—W. Chambers. 1, Ecklinville Seedling; 2, Pott's Seedling.—W. Watt, Cupar. 1, Cellini; 2, Court Pendu Plat.—M. W. M. 1, Souvenir du Congrès; 2, not sure of; 3, Easter Beurré; 4, Beurré Diel.—W. Tee, Greenhill. 1, Mabbot's Pearmain; 2, not known; 3, Cellini; 4, Cox's Pomona; 5, Pott's Seedling; 6, Dumelow's Seedling.—H. Kent. 1, Cellini; 2, Cox's Pomona; 3, Scarlet Nonpareil; 4, Gloria Mundi; 5, Cellini; 6, Warner's King.—J. Humphries. 1, Cellini; 2, Gloria Mundi; 3, Not known; 4, Warner's King; 6, Blenheim Orange.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—J. F. 1, *Dactylis glomerata variegata*; 2, *Geranium sanguineum*; 3, one of the greenhouse *Rhododendrons*, garden variety; 4, *Oenothera Youngi*; 5, *Chrysanthemum uliginosum*; 5A, *Helianthus rigidus*.—J. A. 1, *Juniperus recurva*; 2, *Cupressus Lawsoniana*; 3, *Cupressus nootkatensis variegata*. Apples, next week.—F. W. *Catasetum macrocarpum*.—W. T. *Davallia (Microlepia) platyphylla*.—W. P. *Juniperus sinensis*.—A. S. *Benthamia fragifera*.—L. G. R. 1, *Trachelium coeruleum*; 3, *Asparagus officinalis*; 6, one of the seedling *Veronicas*—perhaps *Ander-sonii*; others not enclosed.

NEMATOID WORMS: R. W. D. There are no such worms either in the leaves or on the roots. What you see are minute insects (Julus and mites), which feed on decaying vegetable matter. The appearance of the roots of the Vines is suggestive that the border is not properly drained.

ROYAL GARDENERS' ORPHAN FUND: D. N. Subscribers of 5s. annually are entitled to one vote at each election. A copy of the list and voting papers are sent to each person entitled to vote, at least fourteen days before the day of election. Subscriptions should be sent to Mr. A. F. Barron, secretary, Chiswick, London. It is a most deserving institution, and worthy of every support.

SEEDLING OAKS AS TABLE-PLANTS: Miss L. D. P. Take the plants up carefully, and pot them into 5-in. pots. Two or even three may be put in each pot. Almost any kind of loam mixed with a little leaf mould will answer. Shade the plants after transplantation, and next season when growth has recommenced, remove the tips of the shoots by pinching, so as to induce a shrubby habit. Unless you have a particular reason for utilizing them for the ornamentation of the dinner-table, we can hardly recommend seedling Oaks as peculiarly suited to the purpose.

TWIN APPLES: G. M. Not at all uncommon in flowers and fruits generally. It arises from the union of two flower-buds in a very early stage of development.

YOUR VINES WON'T SET: X. Smear the foot-stalks of the bunches with honey. In other words, attract the insects. This would demand so much labour and time as to be impracticable, you say. Would not thinning take up more?

COMMUNICATIONS RECEIVED.—F. W. B.—F. M.—J. H. Marden Sydney.—Count S., Strasbourg.—C. Hansen, Copenhagen.—W. B.—R. W. G.—W. Swan.—H. T. M.—E. M., Ireland.—R. D.—G. B. M.—J. F. H.—Expert.—Heath.—W. C. L.—E. C.—Experience.—J. McK.—W. R.—W. J. B.—J. A., Antrim.—S. E. A.—General B.—J. B.—G. McK.—Fern.—D. C.—X. Y.—W. G. S.—E. T. (see article and figure in present issue).—F. M.—E. G. H.—G. D. (next week).—Heath & Son.—Cydonia.—E. M. W.—E. B.—D. T. F.—F. W. B.—R. L. H.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—C. H. F.—F. W. B.—

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 15, 1898.

TURIN.

ONE of the chief attractions of Turin is, perhaps, the fact that it is one of the few continental places in which it is not easy to lose one's self, all the streets running at right angles. The place is less picturesque than the majority of foreign cities of ancient origin; but the person whose "bump" of locality is only imperfectly developed will regard this "disadvantage" with the most perfect equanimity. The National Exhibition, which opened in May, and closes this month, has attracted many thousands of visitors to this, the capital of Piedmont. The horticultural aspect of the exhibition is, perhaps, one of its weakest points, although there is a committee of "Orticoltura, Floricoltura, and Frutticoltura." Minor exhibitions have been held, notably the *primaverile*, from May 14 to 26, and the autumnal display of fruit, flowers, and ornamental plants, from September 18 to 29; whilst the Esposizione Generale itself will, so to speak, expire in a horticultural blaze, in which Chrysanthemums will be the leading feature. This show will open on October 22, and close on October 29, the two principal prizes being a Gold Medal and 200 lire for the best, and a Silver Medal for the second-best exhibit of not fewer than 150 varieties of Chrysanthemums, in *grandissimo fiore*. From the number of Silver Medals offered for Chrysanthemum exhibits, it is quite clear that this popular autumnal plant has become a favourite with the Italians, but not yet to anything like the same extent as in England. The Italian nurserymen devote a good deal of attention to its cultivation and propagation, and some good varieties have been raised, but so far the English and French varieties predominate in the descriptive catalogues.

The Esposizione is enclosed within the walls of the spacious *giardino pubblico*, which extends from the suspension-bridge at the bottom of the Corso Vittorio Emanuele II. to the Valentino Palace, just as the Great Exhibition of 1851 was contained in Hyde Park. Il Castello del Valentino crowns one of the most picturesque views to be found anywhere in the suburbs of Turin, and the whole place is singularly fitted for exhibition purposes; the castle itself has a long and varied history, the present turreted building dates from the seventeenth century, and is now occupied by the Polytechnic School. Much good taste has been displayed in laying out this new public garden, whilst Nature has been so prodigal in her gifts of soil and situation by this charming resort on the banks of the Po, that the gardener's aid is rendered almost a superfluity. Here Bamboos grow like weeds, and Fig trees rapidly attain to very large propor-

tions. A small and apparently permanent exhibit of Signor G. B. Marsano, of Nervi, near Genoa, in one of the beds, comprises a number of extremely healthy Palms, but even more noteworthy than these are some splendid specimens of the variegated form of *Phormium tenax*, of which two plants were on the point of bursting into flower at the time of the present writer's visit early in August.

The small and unpretentious Botanic Garden is in reality a continuation of the new public gardens, from which it is separated by a wall. Its collection of Cacti is very large, and may be described as one of the chief features of the place. The specimen of *Cereus senilis* is quite 5 feet high; *Cereus peruvianus* var. *monstrosus* is probably one of the oldest plants in Europe; *C. validus* has attained to quite 10 feet in height; whilst very fine specimens of *C. Bonplandi*, *C. caesi*, *C. coerulescens*, *C. pernambucensis*, may be specially mentioned, not only because they are to be seen here in all their native vigour, but because they are species very rarely met with outside botanic gardens in England. Palms also grow with great rapidity, and require little or no attention, the more noteworthy specimens being *Chamaerops staurocantha*, and *Latania borbonica*. The Cycads and Musads are chiefly remarkable on account of a stately specimen of *Ravenala madagascariensis*, *Encephalartos horridus*, and a beautiful plant of *Ceratozamia robusta*. *Pothos crassinervis*, with a fine head of red fruit, and *Sansevieria zebrina*, are also, from various points of view, of considerable interest; whilst *Peperomia resedæflora* makes a very effective show with its little heads of white flowers.

Funkias thrive like weeds, the species grown including *F. lancifolia*, *ovata*, *Sieboldiana*, and *subcordata*. There are graceful tufts of *Stipa splendens*, which grow to quite 4 feet in height; *S. capillaris*, *Andropogon*, *Sorghum*, *Cyperus papyrus*, and *Panicum miliaceum*. Indeed, the Gramineæ are quite a feature at the Turin Botanic Garden, quite a large space being devoted to the various genera. Of the Filices, special mention may be made of a very fine specimen plant of *Alsophila australis*, quite 15 feet high; *Cyathea insignis*—both these plants, owing to imperfect shading, are very badly sun-burnt; *Pteris laciniata*, and *Aspidium nidus*. An unusually fine specimen-plant of *Metrosideros albicans* may be specially mentioned. Cannas in great variety give a brilliancy and colouring to the chief entrance of the garden—a pleasant first impression which a mere stroll round does not by any means fully maintain. If appearances go for anything, botany as a science is rather at a discount at Turin, for the botanic garden is in a sad state of decline and dilapidation. The glass-houses are slowly crumbling away, disused hot-water pipes and other materials are "planted" in various parts of the place, perhaps in the hope that they may raise, or develop, into something novel in the way of botanical specimens! But the most serious defect is in the matter of shading: the sun blazes down with pitiless force for so many months in the year at Turin, that shading ought to be a consideration of the highest importance. It does not seem to be, however, consequently many fine specimen-plants are absolutely ruined; many of the Palms, too, are thickly covered with dust and dirt—in fact, they badly want washing.

At Milan, as at Turin, the Botanical Garden is a much neglected institution. It is, perhaps, another instance of the irony of fate, for the earliest private botanic garden was formed at

Padua by Gaspar de Gabrieli, a wealthy Tuscan noble, in 1525; and the first public botanic garden was instituted at the same place by the Venetian Senate in 1543. This place is still in existence, and is interesting as containing "some of the oldest specimens of exotic trees and plants now common in Europe, the patriarchs of our shrubberies, plantations, and conservatories." As early as 1581, this garden contained 400 different species. Other botanic gardens followed in rapid succession, until every city had its *orto botanico*, most of which are still in existence, but many of which are in anything but a flourishing condition. The exhausted state of the country, from a financial point of view, is doubtless one of the primary reasons for this neglect. The Italians sometimes say that they were happier when they were worse off; or, in other words, that the country was much more flourishing when under the "yoke" of the Austrians than it has been since the whole country has been united under one king. Certainly, the unification has not been an unmixed blessing for botanical gardens.

If a little of that "fierce light" which beats around the doings of the committees responsible for public gardens could be brought to bear on those who have the care of the *orto botanico*, a very rapid change would come over the scene! Within a short walk of the Botanic Garden is the Central Railway Station, and this immediately faces the Piazza Carlo Felice, in which gardening is to be seen at the highest possible point of perfection. The area is probably not more than an acre or so, but the effect of the whole reflects very great credit on the gardener in charge. In spite of the extremely hot summer, the grass is as green as it is possible to be, and as well kept as a billiard-table. It may be urged that this kind of gardening is perfectly easy, given plenty of water and constant mowing. But it frequently happens that the most obvious and easiest means for producing good lawns, are just those which are neglected. This Piazza is the centre of perhaps the busiest part of Turin, and yet the outer world is almost completely shut out by the fine trees and healthy shrubs. There are several fine Magnolias, notably *M. macrophylla*; a variety of Maples, especially *Acer japonicum laciniatum*; also, *A. palmatifidum marginatum* and *atro-purpureum*—but both the latter are small plants, and not very robust; possibly they were only planted in the spring, and the great heat may have retarded their growth. The Beeches include a fine plant of a variety described as *Fagus silvatica purpurea*. There is a most beautiful plant of *Sophora japonica pendula*, one of the most graceful trees obtained from Japan; *Araucaria excelsa* also flourishes well; whilst the graceful *Betula nana laciniata* entirely belies its specific name, inasmuch as a specimen-tree here has attained to a height of 40 feet or more. There are a few small beds gay with Phlox, Dianthus, Begonias, blue Aquilegia, some fine clumps of yellow-flowered Cannas, and a number of Dahlias planted singly in small beds, and edged round with *Coleus* in variety. Altogether, the Piazza Carlo Felice is a perfect "little dream" of a place.

In a direct line from the Piazza Carlo Felice is the Piazza Castello, with the curious, old-world Palazzo Madama in its centre, one of the few ancient buildings now standing in Turin, dating from the latter part of the thirteenth century. The Palazzo is partly covered with Ivy, and a portion of it is railed off, and trees have been planted where at one time a moat probably existed; these trees are

of quite recent introduction, and are a great acquisition. In the few yards of earth between the trees and the railings, Cannas, Marigolds, and double Zinnias, are allowed to flourish at their own sweet will.

A glance through the flower-market—or, rather, the open-air market—of which flowers and potted plants form one of many very miscellaneous features, is not without interest. There is a very marked preponderance of small plants of various sorts of Palms in pots for decorative and window purposes. The ordinary Fig is extensively cultivated as a pot-plant, and, when well trained, it is distinctly ornamental; Caladiums, a Banana (*Musa Ensete*), Chrysanthemums and Pelargoniums are among the plants most generally cultivated for market garden purposes. The Italian love for flowers is unquestionably deep-rooted—it may be said to amount to a passion. They are especially in evidence at public functions, for which the French and Italians have an especial liking, and in which they perhaps excel all other nations. One historian tells us that “favourite princes and generals are received into towns, and even villages, through triumphal arches decorated with flowers; and the ground is also sometimes strewn with them. The lives of Bonaparte, Murat, and Beauharnais afford many examples.” The truth compels the present writer to admit that the triumphal arches erected at the Turin Exhibition were decorated with paper flowers, a fact which, while serving to prove the Italian love for flowers, may be taken more as a proof of their economy than of their taste! A very large trade is done in pots and boxes of Orange-trees, Oleanders, Myrtles, Pomegranates, Sweet Bays, and similar plants, all of which require very little culture, and not much attention, and scarcely any persons are so poor but that they can afford to have some kind of floral decoration in their rooms.

So far as nurseries in the North of Italy are concerned, they are comparatively few, and rarely extend beyond an acre or so. The Italian nurserymen confine their attention largely to producing plants, for which there is always a ready and sure sale. The capital invested in one of the great London firms of nurserymen would probably purchase the stock and goodwill of all the nurseries in Italy put together, and possibly there would then be left a very fair amount for working expenses. *W. Roberts.*

NEW OR NOTEWORTHY PLANTS.

LIGUSTRUM WALKERI (DECAISNE).*

This species is a native of Ceylon, and is remarkable for its pretty foliage (fig. 82). It was shown by Messrs. Paul & Son at one of the recent meetings of the Royal Horticultural Society, and received an award. It is not likely to be hardy in this country. The description in the appended note is taken from Trimen's *Handbook to the Flora of Ceylon*.

* *Ligustrum Walkeri*, Decaisne, *Nouv. Arch. Mus.*, Ser. 2, 11, 27 (1879).—A shrub or small tree, branchlets with copious white lenticels, young parts glabrous; leaves $1\frac{1}{2}$ to 3 in., oval or lanceolate, acute at base, tapering to very acute apex, entire, glabrous, often somewhat conduplicate, thin; lat. veins obscure, petiole short; flowers very numerous, pedicellate, in clusters on the divaricate branches of large pubescent, pyramidal, erect, terminal panicles 4 to 6 in. long; cal. campanulate, lobes very shallow and broad; cor.-lobes oblong-oval, subacute; stam. exserted; drupe about $\frac{1}{2}$ in., ovoid, purple.

Lower mountain zone, 3000 to 5000 feet, rather rare. Haputale and Badulla districts abundant. Fl. Feb. to June; white, sweet-scented. Also in the Nilgiris.

Closely allied to *L. robustum*, Bl., of the Malay Peninsula, Burma, and E. Bengal, and perhaps merely a variety of it.

ORCHID NOTES AND GLEANINGS.

AGANISIA CÆRULEA.

THIS plant, which was described by Reichenbach in our columns, 1876, p. 226, is figured in a recent number of the *Revue Horticole*. The racemes are pendulous, and bear flattish flowers about 5 cent. (2 inches) across. The perianth segments are obovate spatulate, of a pure cœrulean blue as represented, the projecting three-lobed lip being chocolate-brown, edged with yellow. The column is provided with two wings of a similar colour.

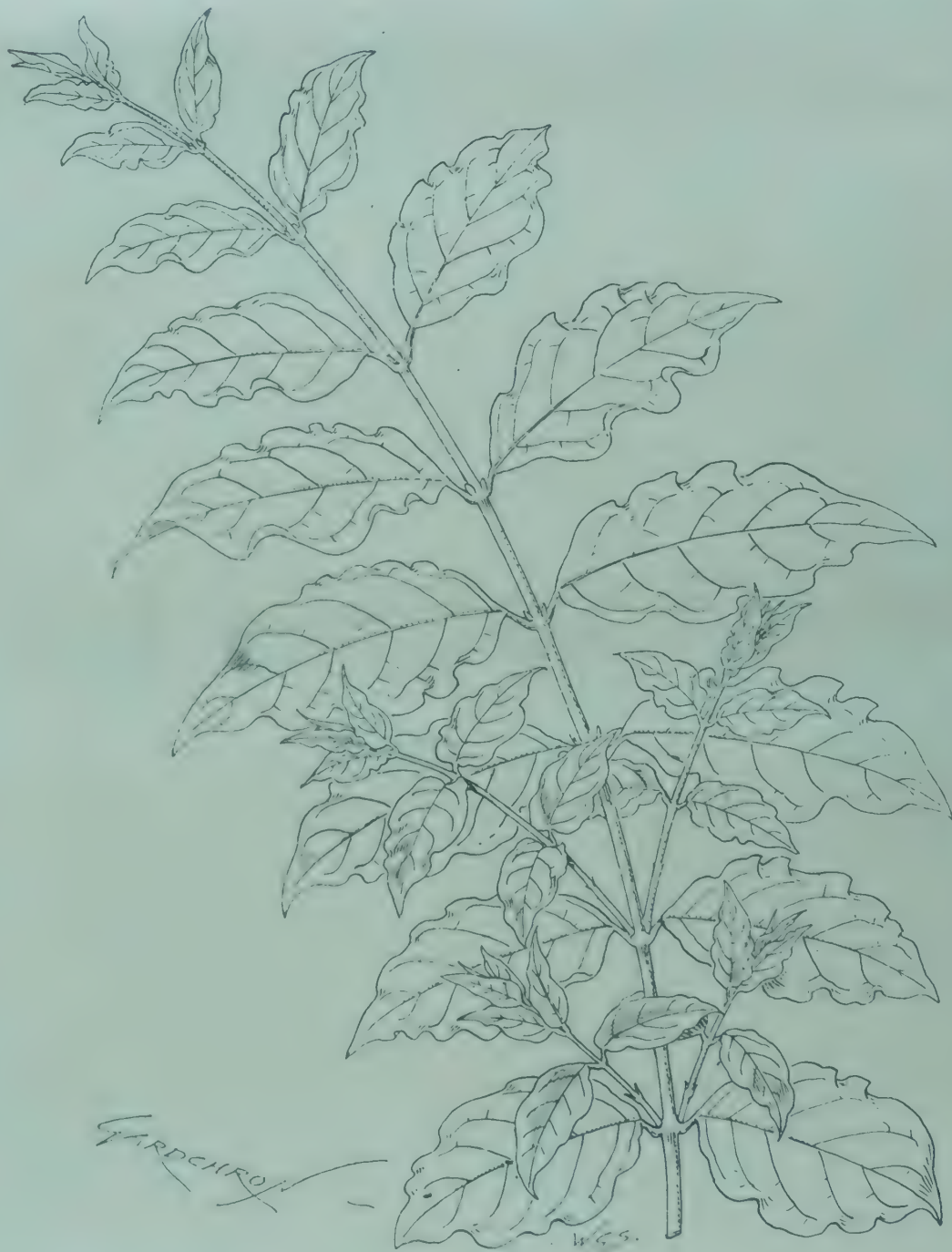


FIG. 82.—LIGUSTRUM WALKERI.

ONCIDIUM INCURVUM ALBUM.

A fine plant of this elegant and rare white Oncidium is flowering in the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr., Mr. H. J. Chapman). The plant bears four spikes, the two already bearing expanded flowers being 5 feet in length, and gracefully displaying their numerous flowers on many branches.

Oncidium ornithorhynchum album, also a very rare albino, in the same collection, is in splendid condition, and sending up fifteen flower-spikes, with flowers about to expand. Many other rare species and hybrids are about to flower, and the whole collec-

tion, despite the long spell of hot, dry weather, is in excellent condition. The fine collection of *Masdevallias* is one of the most complete in cultivation, and contains a large number of the dwarf and frail species.

CATTLEYA × HARDYANA MRS. C. E. CHRIMES.

A flower of this handsome and distinct variety is sent by Mr. Mark Watts, gardener to C. E. Chrimes, Esq., Selwood, Rotherham, the home of the fine collection of the late G. D. Owen, Esq., formed also under the care of Mr. Watts. The sepals and petals have their bases and mid-rib pure white, the remaining portions bright-rose coloured. The lip is Roman

red at the base, with yellow veining, which passes into the bright-yellow colouring on each side of the middle area. The front lobe, which is broad, and finely crimped, is of a rich, dark, rosy-crimson, and differing in colour from most of the other varieties, though probably nearest to that figured in the *Lindenia*, x., p. 75, as *C. × H. Lindeni*. It is a fortunate acquisition, flowering out of a small lot bought as *Cattleya aurea*, from Messrs. Charlesworth & Co., of Bradford.

ONCIDIUM FLEXUOSUM.

This, one of the oldest species in cultivation, having been introduced from Brazil by Messrs. Loddiges

nearly eighty years ago. It is still one of the most elegant. In the earlier days of Orchid exhibiting, large specimens of it often formed the most attractive feature in the collections shown. Later, our old friend got slighted, to allow of the advance of often less beautiful but newer kinds; but again, of late years, the keen perception of the grower of flowers for decorative purposes and for cutting, has re-established it in favour. It is pleasant to get an elegant inflorescence bearing fine rich yellow flowers from Mr. J. G. Wilson, The Gardens, Isle of Rum, Inner Hebrides, as it not only displays a worthy subject, but serves to demonstrate the wide range of Orchids under cultivation, and that they are not confined to the cities and busy haunts of men.

LÆLIO-CATTLEYA × EXONIENSIS.

While all admit that this is still one of the finest, as well as one of the oldest, garden hybrid Orchids,

Lælia crispa was one of the parents. It is doubtful whether *Cattleya labiata* or its variety *Mossiae* was the other. This must remain an open question until another batch of the hybrid duly recorded is raised. It is a beautiful, fragrant and showy flower, coming in at various seasons, but generally late in the year, and a fresh raising of it would be appreciated by lovers of good Orchids. J. O'B.

"LINDENIA."—In the last number of the *Lindenia* we find coloured representations of various forms of the following:—

LÆLIA PRÆSTANS and *PUMILA*, t. DCXXV. to DCXXVII, including a pure white form "candida" of Linden, "amabilis," Linden, white, with the anterior lobe of the lip flushed with pale lilac, and with three parallel stripes of the same or somewhat deeper colour. At the same time M. Linden avails himself of the opportunity to give a summary of the history of the various forms.

ODONTOGLOSSUM VIGERIANUM ×, t. DCXXVIII, is supposed to be a natural hybrid between *crispum* and some other species not identified. The segments are narrow, white,

the different varieties of *Roses* have been mentioned as being specially worthy of note in the reports published by the *Gardeners' Chronicle* of the two most recent exhibitions at the Crystal Palace. For this purpose I have prepared the following list, which, however, does not include the garden varieties:—

Variety.	1897.	1898.	Variety.	1897.	1898.
Abel Carrière ...	1	2	Merveille de Lyon ...	1	1
Alfred Colomb ...	7	3	Mrs. R. G. Sharman ...	7	13
Alfred K. Williams ...	13	12	Crawford ...	7	13
Antoine Rivoire ...	—	3	Mrs. John Laing ...	16	12
Auguste Rigotard ...	—	1	Mrs. W. J. Grant ...	7	21
Augustine Guinoisseau ...	1	—	Mrs. Jowitt ...	1	—
Baroness Rothschild ...	1	—	Paul's Early Blush ...	1	—
Beauté Lyonnaise ...	—	1	Pride of Waltham... ..	1	1
Beauty of Waltham ...	4	4	Prince Arthur ...	5	6
Camille Bernardin ...	5	1	Prince Camille de Rohan ...	—	2
Captain Christy ...	2	2	Prosper Laugier... ..	—	1
Captain Hayward ...	5	12	Reynolds Hole ...	1	1
Caroline Testout ...	9	13	Rev. Alan Cheales ...	1	1
Charles Darwin ...	—	1	Robert Duncan ...	—	1
Charles Lefebvre ...	7	8	Salamander ...	—	1
Clara Watson ...	—	1	Sénateur Vaisse... ..	2	1
Comte de Raimbaud ...	6	5	Sir Rowland Hill ...	2	—
Comtesse de Ludre ...	—	1	Souvenir du Président ...	—	—
Countess of Caledon ...	2	2	Carnot ...	1	2
Countess of Oxford ...	1	—	Star of Waltham ...	2	—
Countess of Rosebery ...	1	—	Susanne-Marie Radocanachi ...	5	6
Dr. Andry ...	3	4	Thomas Mills ...	—	1
Duchess of Albany ...	—	1	Tom Wood ...	3	4
Duchess of Bedford ...	2	3	Ulrich Brunner ...	14	12
Duchesse de Morny ...	5	—	Victor Hugo ...	5	1
Duke of Edinburgh ...	2	10	Victor Verdier ...	2	—
Duke of Fife ...	1	1	Viscountess Folkestone ...	1	3
Duke of Teck ...	—	1	Xavier Olibo ...	5	2
Duke of Wellington ...	4	8	TEA-SCENTED VARIETIES, &c.		
Dupuy Jamain ...	4	10	Amazone... ..	1	1
Earl of Dufferin ...	7	3	Anna Olivier ...	5	7
Ellen Drew ...	1	—	Bridesmaid ...	4	6
Etienne Levet ...	3	6	Catherine Mermet ...	18	13
E. Y. Teas ...	2	2	Cleopatra ...	1	9
Exposition de Brie ...	1	2	Comtesse de Nadaillac... ..	7	14
Fisher Holmes ...	5	3	Comtesse Panisse ...	2	1
François Michelon ...	5	—	Devoniensis ...	—	2
General Jacqueminot ...	5	5	Enchantress ...	—	1
Grace Darling ...	—	1	Ethel Brownlow ...	6	—
Gustave Piganeau ...	10	16	Etoile de Lyon ...	3	—
Heinrich Schultheiss ...	2	3	Ernest Metz ...	5	7
Helen Keller ...	8	10	Francisca Kruger ...	4	2
Her Majesty ...	12	—	Francis Dubreuil ...	—	1
Horace Vernet ...	13	7	Golden Gate ...	1	4
Jeannie Dickson ...	2	5	Hon. Edith Gifford ...	2	7
Kaiserin Augusta Victoria ...	12	9	Innocente Pirola ...	9	5
Lady Arthur Hill ...	—	1	Jean Ducher ...	2	3
Lady Helen Stewart ...	2	1	Luciole ...	1	1
Lady Mary Fitzwilliam ...	4	4	Madame Berard ...	1	—
La France ...	9	16	Madame Bravy ...	1	4
La Fraicheur ...	1	3	Madame Cusiu ...	20	5
La Rosière ...	1	—	Madame de Watteville... ..	12	4
Louis Van Houtte ...	4	—	Madame Hoste ...	6	8
Madame Cadeau Ramey ...	—	2	Madame Lambard ...	—	2
Mdme. Eugène Verdier ...	4	—	Madame Margottin ...	1	—
Madame Gabrielle Luizet ...	5	12	Maman Cochet ...	7	11
Madame Haussman ...	2	—	Marie Van Houtte ...	7	8
Mdme. Joseph Bonnaire ...	1	—	Medea ...	5	4
Madame Jules Finger... ..	—	2	Muriel Grahame ...	5	5
Madame Victor Verdier ...	3	4	Niphetos ...	1	2
Magna Charta ...	—	4	Princess Beatrice ...	—	2
Marchioness of Dufferin ...	4	3	Princess of Wales ...	3	8
Marchioness of Downshire ...	3	3	Rubens ...	—	6
Marchioness of Londonderry ...	8	—	Souvenir d'Elise Vardon ...	6	7
Margaret Dickson ...	4	13	Souvenir de S. A. ...	—	—
Marie Baumann... ..	7	9	Prince ...	4	13
Marie Finger ...	1	1	Souvenir d'un Ami ...	3	11
Marie Rady ...	2	—	Sylph ...	2	2
Marie Verdier ...	2	2	The Bride... ..	11	11
Marjorie ...	1	1	NOISSETES.		
Marquise de Castellane ...	1	—	Caroline Kuster ...	4	3
Marquise Lita ...	7	7	Maréchal Niel ...	—	12
Maurice Bernardin ...	1	2	White Maréchal Niel ...	—	1
Mavourneen ...	—	2			



FIG. 83.—AN AGED CHESTNUT, KNOWN AS "JUMBO-TREE," IN THE GARDENS AT EAST SUTTON PARK. (SEE P. 284.)

there has been from the first considerable difference of opinion about its parentage. It was raised by Dominy for Messrs. Jas. Veitch & Sons, and noted by the late Professor Reichenbach in the *Gardeners' Chronicle*, 1867, p. 1144. Two hypotheses were suggested as to the parentage, of which there was no record. The one was *Cattleya labiata* Mossiæ × *Lælia purpurata*, and the other *Lælia crispa* × *L. purpurata*. The latter suggestion has been disproved by the L. × *splendens*, raised in the gardens of C. L. N. Ingram, Esq., and also by Messrs. Jas. Veitch & Sons, while the former suggestion is settled by L.-C. × *Canhamiana* and L.-C. × *Canhamiæ*, both raised by Messrs. Veitch.

A flower received from Mr. Wagstaffe, Cluses Hall Gardens, Gisburne, Clitheroe, gives an opportunity of examining the pollinia, and that test proves conclusively that it is a *Lælio-Cattleya*; while the peculiarly elongated and crimped lip tells plainly that

much undulated, and heavily blotched with purplish-brown. The disc of the lip is yellow, with raised lines at the base.

CYPRIPEDIUM NIOBEX.—A hybrid between *C. Spicerianum* and *C. Fairrieanum*. The standard is large, white, with purple lines; the petals deflexed, wavy at the edge, with lines and spots of violet and a smooth, bucket-shaped lip; t. DCXXIX.

ODONTOGLOSSUM PESCATOREI VAR. *ROI LEOPOLD*.—A beautiful form, with broad, pointed segments, marked near the tip with large purplish blotches; lip small, anterior lobe cordate, rounded sharply, pointed, white, with short, radiating, violet lines at the base; t. DCXXX.

CATTLEYA TRIANÆI VAR. *SAMYANA*, t. DCXXXI.
LÆLIA ANCEPS VAR. *BALLANTINEANA*, t. DCXXXII.

THE ROSARY.

ROSES AT THE CRYSTAL PALACE.

It may be interesting to some of your numerous readers, writes Mr. Ernest Bewley, of Rathmines, Dublin, to be able at a glance to see how frequently

ROUND MAIDSTONE.

(Concluded from p. 276.)

EAST SUTTON PARK.—This estate lies about seven miles to the south-east of Maidstone; but if the nearest railway-station must be reached, it is necessary to travel from Maidstone up to Paddock Wood, and thence to the little station of Headcorn. From Headcorn, East Sutton is distant about four miles, and in driving this distance the scenery is not specially remarkable, being very similar to that which characterises the greater part of the Weald of Kent. If the scenery was uninteresting, however, our attention was excited by the remarkable cottages that sparsely furnish a short length of the road. They are constructed for the most part of timber, and their picturesque appearance is now uncommon, even in the most rural districts of rural Kent. There were others of more modern build, but most of these could boast of none other than the ground-floor. The hedges are chiefly of Whitethorn, and

on September 23 they bore an unusually plentiful crop of the fast reddening "braes."

The residence of East Sutton Park can be seen nearly the whole distance from the station. It lies just below the extreme top of the hill, on the same ridge that Linton Park is situate upon. The district around is very largely given to Hop-growing, and there is a "garden" of them immediately to the rear of the residence.

East Sutton Park is tenanted by T. Oliverson, Esq., and a charming little place it is. From the front of the plain-looking house there is a most extensive view over the Weald. The South-Eastern trains can be watched clearly for several miles on their way from Tonbridge to Ashford. Far beyond can be distinguished the Sussex hills, thirty miles away, and it is even said that the motion of the waves in the Channel, in the direction of Dungeness, is reflected on a clear day upon the sky.

The larger vegetation of the district does not appear so fine as at Linton. The timber trees are by no means large, if we except some old Chestnuts, to which reference will presently be made. Even the Oak is stunted, and most of the specimens have lost their leaders whilst young. Had more planting been done, especially of Conifers and other evergreen species, it would have given to the pleasure-grounds a feature they now lack, and would have prevented a certain amount of bareness. The ground slopes away very steeply from the front of the house; and at a much lower level, but only a short distance from it, are about six acres of water, which are surrounded by pheasant and other game preserves.

At the back, and higher than the residence, are the only specimens of large timber that we saw. These old Spanish Chestnut-trees are indeed remarkable. It would be difficult to compute their age, but they are very old, and though still alive even almost to the tips, it is evident that they are gradually dying. The boles of several of them are exceedingly pretty, and one in particular. At 5 feet from the ground this one measured 20 feet in circumference. It is clean and straight for some distance up, and the cracks in the bark are as attractive as the finest carving could be. Its neighbour is very different, and has been broken about. One of its limbs, when seen only a short distance away, bears a striking resemblance to an elephant's trunk, and it is known as "Jumbo-tree." This has been photographed (see fig. 83, p. 283), so that our readers may form their own opinion upon it.

THE KITCHEN AND FRUIT GARDENS, &c.

For the past six years or more the gardens have been in the charge of Mr. J. Lewis, who removed here from Leeds Castle in the same county. The methods by which he has increased the utility of the fruit and plant houses, without incurring the expense that the substitution of new ones for them would have entailed, proves him to be a gardener of much ingenuity.

The kitchen-garden is in two portions, and together the area is about three-and-a-half acres. The crops generally were looking as well as could be expected in the midst of such a drought as the district has not known for many years. Much has already been written about the effects of this drought, and we will not prolong the unpleasant topic, but never did we more painfully and fully see its effects than in the pleasure-grounds and park at East Sutton. It is useless to speak of watering, when the quantity requisite even for plants in pots is begrudged.

As in most Kentish gardens, the fruit-trees form an important feature of the kitchen-garden. Many of the bush-trees were removed during last planting season, with a view to replacing them with espaliers, this form of tree being thought to be more in character with the part of the kitchen garden nearest to the house. That these large trees are now looking so well is an indication that great care was taken when removing them. The espalier-trees in this and many other gardens in the county are trained to stout upright stakes, and not to a fence, arch, or other permanent structure. The system appears to answer well. Even

the little horizontal cordons, in an ordinary season, bear splendid crops of fruit. There were capital crops upon some of the Apple-trees even this season, and particularly of the varieties King of the Pippins, Bess Pool, Court Pendu Plat, and Peasgood's Non-such. Mère de Ménage, poor generally this season, was no better at East Sutton, and Lord Derby was also indifferent.

On the garden-walls were trees of the choicest fruits only, Peaches, Nectarines, Plums, Figs, &c. But how greatly were the Peach-trees suffering from —. Try as one will it is almost impossible to avoid repeated allusion to the water-famine. All out-of-door plants show its deadly effects, and it enters into and pre-occupies our thoughts the moment they wander back to garden scenes we would describe.

In the glass-houses there is not this trouble. One of the first we entered has a three-quarter span-roof, it has been so made from an ugly pit. In the spring it now affords a crop of Tomatos; in late summer a crop of Melons, and afterwards miscellaneous plants are housed in it. Besides excellent tuberous-rooted Begonias, mention may be made of a batch of finely-grown plants of Euphorbia jacquiniæflora, and several bright, highly-coloured Codæums. These latter plants are cultivated capitally. Another house is almost filled with them, and such specimens as we saw of the varieties Her Majesty, Morti, gracilis, Chelsoni, &c., are not often excelled in point of decorative quality. In other houses there were capital crops of Melons. The heaviest fruit of the season, Mr. Lewis informed us, was one of Windsor Castle, that weighed 7 lb. 13 oz.

In a comparatively narrow case against the wall was a very heavy crop of Tomatos, planted at 14 in. apart, at the front of the house. They ran about 7 feet high, and bore fruits from bottom to top. Of many varieties grown, the best were declared to be Conference, and a solid, rather large-fruited Perfection type variety, known locally as Barham Court. Some excellent young Peach-trees were grown against the back wall of this house.

The vineries have been converted from lean-to structures to three-quarter spans, and in all of them were good general crops of Grapes; but some of the Vines are aged, and require to be replaced with fresh ones.

The greenhouses were gay with summer and autumn-flowering plants in much variety. Evidently Mr. Lewis is intent upon making the gardens as satisfactory as possible. R. H. P.

GLEANINGS FROM KEW.

LATE ROSES.—Among the numerous Rose-beds at Kew the following are still in beauty: Grace Darling, Viscountess Folkestone, Augustine Guinoisseau, Madame Lambard, and Camoens.

Helmholtzia glaberrima.—This is a plant unknown out of botanic gardens. Nevertheless, its bold foliage resembling somewhat that of the New Zealand Flax (Phormium), and its tall, much-branched, many-flowered panicles of ivory-coloured blossoms, render it an ornamental plant of very high merit. The construction of the flower is also so curious as to interest the botanist. It is in flower in the temperate house for many months of the year.

Amaryllis Belladonna.—Rows of this fine bulbous plant are planted in narrow borders by the side of the Aroid-house, and other houses at Kew. A magnificent form is elsewhere described as A. Belladonna var. Kewensis. The flowers are of a lovely shade of rose-pink, but the absence of foliage is a defect that might perhaps be obviated by a background of small-leaved Euonymus or other dark-leaved shrub planted so as to cover the wall.

Polygonum lanigerum.—A bed of this is very effective. It is a perennial 4 to 5 feet high, with broadly lanceolate, recurved, silvery leaves. It has not suffered from the effects of the drought.

Early Chrysanthemum "Frécocité" is very useful as an edging to herbaceous borders, being of dwarf habit, and bearing a profusion of small flower-heads, maroon on the outer florets, clear yellow in the centre.

The China Aster.—The wild, single form of this has already been mentioned in these columns, but its beauty and utility are such that we desire again to bring it under the notice of our readers. At Kew this year it has been, and still is, very beautiful.

Silene Fortunei is the name of a newly-introduced Chinese species from Tschen Se, now in flower at Kew. It will shortly be described and figured in the *Botanical Magazine*, a circumstance which precludes the necessity of saying more than that it resembles a large form of the Nottingham Catch-fly, but with lacinate petals.

Dianthus sinensis is now in flower. It is specially interesting as the starting-point of Dianthus Heddewigii and other garden forms.

Nicotiana sylvestris is a tall-growing species of Tobacco, with pure white flowers of much beauty. It is now in flower, as is also N. Bigelovii, another white-flowered species, whose blossoms expand at night, covering the plant with a sheet of bloom.

Statice sinensis is a species with silvery calyces and yellow corollas. It is unlike the other cultivated species, and will, we believe, shortly be figured in the *Botanical Magazine*.

Didiera mirabilis.—Among the most treasured plants is a small but thriving specimen of the very curious plant figured in our columns, February 19, 1898, p. 110.

Dendromecon rigidum, a shrub with linear, oblong acute, glaucous-leaves and yellow flowers; when seen from a distance resembles Rosa berberidifolia, or some Cistus. Closer inspection reveals its affinity with the Poppies. It is now in flower in one of the borders outside the economic-house at Kew.

Rudbeckia speciosa.—A bed of this plant commonly but erroneously known as R. Newmanni is very effective just now, the large yellow flowers with dark purple centres being very conspicuous.

The Tree Tomato.—In the new wing of the Temperate-house at Kew is a fine plant—tree rather, of Cyphomandra betacea, with numerous pendent clusters of ovoid red fruit, each as big as a hen's egg, said to be of good flavour.

Diospyros Kaki is fruiting in the succulent-house at Kew. Though the foliage has nearly all fallen, the handsome orange-red fruits are very attractive. They should be thoroughly "bletted" before eating.

CHRYSANTHEMUMS.

CULTURAL NOTES.—The month of October is always a busy season for the cultivator of Chrysanthemums, and his anxious moments are increased if he intends to exhibit the blooms. It cannot be said that the exhibition of Chrysanthemums in any form is on the wane, though many would have had to believe ten years ago that such was the case. The plants should be safely housed by this date. Vineries where the crop has been gathered and otherwise have so often to accommodate the Chrysanthemums that much difficulty is experienced in providing the necessary amount of light and air. This difficulty is increased when the vinery is full of late-keeping Grapes. In this case too much moisture is detrimental to the Grapes when once they are thoroughly ripened, and too much heat and too little air are all against the free and perfect development of the Chrysanthemum blooms.

Where the Vines are cleared of their crop, the removal of surplus lateral growth, or even the shortening of the bearing shoots, does no harm to the Vines, providing maturity of the wood is assured. It is pitiable to see a well-grown collection of Chrysanthemums, with weakened peduncles, increasing in length owing solely to the lack of light after housing. Even in Peach-houses this difficulty is often present. In this case, as many of the leaves as can be spared from the Peach-trees must be removed.

Cultivators should take note of the progress made by the peduncles, as much depends upon the state of this portion of the plant; save there are varieties with exceptionally weak peduncles that do produce good blooms, but such instances are rare. As a rule, varieties of the Japanese section have stout peduncles.

not always of great length; some are extremely short, yet stocky when under favourable circumstances. An important point about the growth of the plants at this stage is that of overcrowding the plants. If they are standing too thickly, there is sure to result an early and premature loss of foliage. This cannot be other than detrimental to the future development of the blooms. The leaves may fall through overcrowding or over watering the plants when housed. Cultivators do not consider the difference in the evaporation of moisture when the plants are out-of-doors, and that when they are under glass. The plants require water twice daily in August, but at the end of October not more than twice each week.

If it be a question of housing 200 plants in a space only large enough for 150, it would amply repay the cultivator to retain the smaller number only. Much care is necessary at this stage of the development of the blooms to supply stimulative food in the right manner, and of the correct nature. Experienced cultivators would not give strong doses of nitrate of

the roots for development of the blooms should be done carefully, and that in doses weak and often. Some writers say, when the colour of the petals is visible, all stimulating food should cease. My experience is that this is a time when aid is judiciously needed. Shade is a necessity to the plants during the time the blooms are expanding. Many blooms are injured in the absence of it, especially if several dull days follow each other. Tiffany or scrim-canvas upon rollers, run up and down according to requirement, is the best means of affording shade, although recourse has to be had sometimes to more primitive methods, such as the use of lime, summer-cloud, and even a mixture of clay and water put on the glass from the outside. It is a mistake to make the shade too dense, as the expanding blooms lose much of their natural colour under such conditions, and in close competition this is an important element.

Free ventilation must be given the plants, avoiding a direct draught, especially when the wind is from the east, and the blooms are three parts expanded or

a fine specimen, but suddenly upon a close inspection several brown specks resembling dust in appearance, are plainly seen. In a short time, the next day perhaps, it will be found that the dust-looking specks have increased considerably, quite half the florets being attacked in the same manner. After the lapse of a few days the damping has spread so rapidly that large holes can be seen in them, and if this continues for a few days the bloom is entirely spoiled.

Unslaked lime in an open vessel placed amongst the plants is useful in preventing the damping of the blooms, as it dries the atmosphere. *E. Molyneux.*

HOOKER MEDAL.

WE have now the opportunity of giving an illustration (fig. 84) of the Gold Medal presented in May last, by the Linnean Society, to Sir Joseph Hooker, in commemoration of his unparalleled and long-continued services to botany. The likeness is a good one, and the execution of the Medal, by Mr. Pinches, all that could be desired. Subscribers to the Medal-fund have been presented with a copy in bronze, which will be highly valued by the recipients.

DENMARK.

DANISH CAULIFLOWERS.—Seedsmen collect their stock from widely differing sources. The chief centres for the seed trade have for several years been Erfurt, Quedlinburg, Paris, London, &c., but if we consider the places where the seeds are actually grown, and not merely stored, we must seek in still more widely-spread localities. Thus, as to Cauliflowers, we shall certainly not find the chief centre of cultivation to be at Erfurt, but in Denmark. It is true the Erfurt Cauliflower was once the best and most famous, especially when a variety had been cultivated there for many years, and suddenly showed an amelioration never before remarked. But the seeds were enormously expensive, chiefly on account of many failures in harvesting. Then, as now, the Cauliflower in the climate of central Germany is often a failure, not only because of the weather but also owing to insect pests, which destroy the crops. Travellers have occasionally visited well-known seed farms, wishing to see good Cauliflower-culture and seed-harvesting. The centre for the best Cauliflower-cultivation is to be found far more to the north—at Copenhagen. All the best Cauliflower-seeds, be they the so-called Erfurt varieties or not, are harvested in Denmark, and especially in the Danish Islands. From there, and particularly from the environs of Copenhagen, fine strains of Cauliflower-seeds are sent all over the world, and seed-merchants in most countries well know that Copenhagen seed is of good value. This also the price of it proves, as Copenhagen Cauliflower-seed often is twice as dearly priced in our seed-catalogues as is that from any other origin. It may interest readers of this paper to know why the Cauliflower-plant is really better developed in Denmark than anywhere else. First, there is an explanation to be gleaned from a study of natural conditions, especially from meteorologic influences.

It is well known, and has often been proved, that many economic plants acquire a better flavour, taste, or scent in northern regions. The long days of the summer have something to do with this, and much has been written on the subject by an author well-known to English readers—the late Professor Schübel, of Christiania. Seeds from northern (Scandinavian, for instance) countries have virtues of their own. Nearly all seeds, save those of Conifers from the extreme North, are larger individually than those from Germany and more southern countries.

It is important for growers to know that experiments made in Denmark have shown that seeds harvested there yield plants which never run to seed too early. The climate is influenced by the proximity of the sea; the plants develop slowly but evenly and well, so that the good properties are matured. The summer-heat is not so injurious as in more southerly countries. The quality of Danish vegetables is

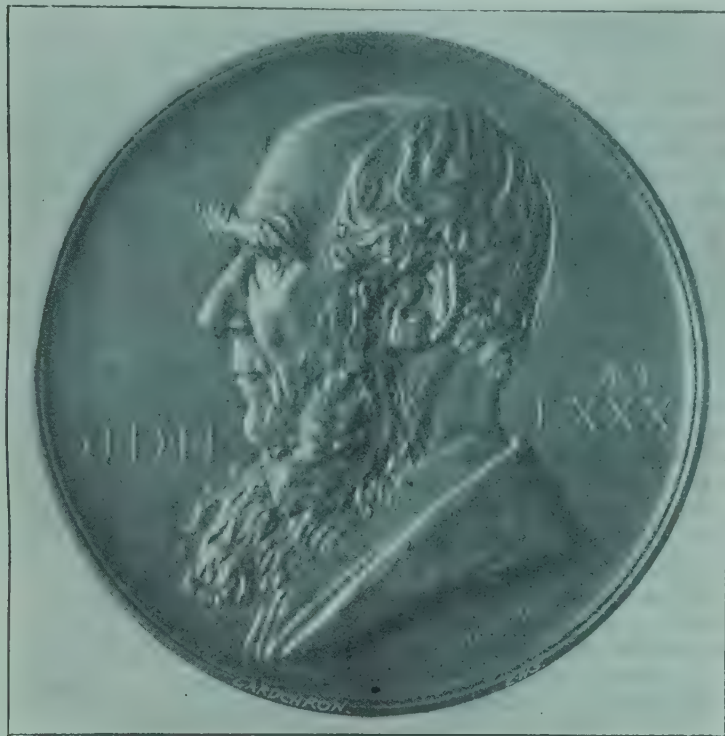


FIG. 84.—THE "HOOKER" MEDAL.

soda to plants that are forward in petal development, although a small quantity given to plants that are backward would hasten their progress, and elongate the sap-tissues, preparing them for future stimulative food.

The state of the roots should guide the cultivator as to the advisability of supplying much stimulant. If there is a lack of surface or other freshly-made rootlets, then strong doses, or even any, would result in ill-effect. The surface-roots of plants are too often injured, when least expected, by the injudicious application of stimulating food when the plants are not in a fit state to receive it.

Rife have been the complaints this season about the premature decay of newly-formed buds. Instead of such buds developing evenly and fast, they attain the size of Peas, then "go off" quite suddenly. Upon close examination the peduncles are found to be woody in texture, caused more probably by strong doses of some stimulating food being given the plants at a time when the soil is exceptionally dry, and thus unsuited to receive supported aid of this kind. A partial, or at times, serious loss of rootlets takes place by such indiscrimination. A thorough soaking of the soil with clear water is the correct treatment at that stage, to be followed later by the stimulant. Whatever is given in the way of assistance through

even less, as such draughts of cold air are a precursor of damping in the blooms, especially if the plants have been freely fed with stimulating food. The excessive employment of fertilisers with a view to enlarging the blooms beyond a fair and reasonable size, is too often the cause of this premature decay known as "damping." As a rule blooms of the incurved section, such as the thick, fleshy-like petals of the Queen of England section, are the most addicted to damping. Even the unfolding buds of Japanese varieties are attacked in a similar manner. Damping is more prevalent in damp, foggy weather.

Again, if the surface of the blooms become exceptionally cold through a great lowering of the temperature of the house, moisture condenses thereon much quicker than where a buoyant atmosphere is maintained. If a bright day follows a dull time, many of the blooms are thus burnt, as it were, especially if no shading be provided. By the aid of artificial warmth the air should be kept in a buoyant state night and day. Warm the pipes, and ventilate freely, but in such a manner that a direct draught is not caused.

For the benefit of the beginner in Chrysanthemum-culture, I will briefly describe the damping of the florets. Take for example a large three parts unfolded bloom of Empress of India. There is the prospect of

therefore, wonderfully good, and this is proved by the large exports of certain of the produce—of Cabbages to America, Cauliflowers to various places, and so on. For a long time Danish growers worked for others. It frequently happened that their Cauliflower seed was sold wholesale to Erfurt firms and returned, even to Denmark, as true Erfurt-grown seed. This is no longer. It is known that the Danish Cauliflowers are the best, especially those raised near Copenhagen, whence the produce is sold at a high price, and sometimes a year in advance.

The reason for this may be traced to natural causes. A good soil is found, especially well suited for Cauliflowers, in the vicinity of Copenhagen. Last but not least, should be mentioned the way in which Danish growers have continued to select only the very best strains of Cauliflowers, rejecting every one that was inferior.

There are large seed-farms near Copenhagen well worth visiting. Every grower feels an interest in seeing the newest machinery, irrigators, channels, &c., and all these things may be studied at the seed-farm of Immanuel Levy, Vangede, a village near Copenhagen. Traveller.

SCOTLAND.

TOMATOS AS A FARM CROP.

THIS is not an uncommon crop in the South of England. In Scotland, however, it is a very uncommon one, and I know of only two instances where it has been attempted. In both it proved that in Scotland a very large crop of Tomatos can be grown out-of-doors; but it also showed that our seasons are too short to allow of their ripening, and as a consequence the fruit must be gathered in a state of unripeness.

However, neither of the above instances proves the absolute impossibility of ripening a crop. It is indispensable, in order to secure any degree of success, that a light, warm soil, and a well-sheltered position be chosen. The variety of Tomato should be one that ripens its fruits early. Strong plants with a tendency to fruitfulness given them before planting out, must be employed. Planting above the level, or on ridges, would be advantageous. Manuring should consist in shallow or surface-dressing, and no nitrates or phosphates must be applied, except at the time of planting. When applied late in growth, as in Celery, these materials are apt to cause growth after it should have ceased. The plants need to be pinched at the earliest moment, the proper amount of fruit left on each, neither more nor less than will ripen, and the growths and foliage kept reduced to the proper quantity. A great help to ripening Tomatos in cold is to keep them perfectly dry; and a help to this in the open would be to loosen the roots of the plants, first on one side, and then in a few days on the other.

NEW DOUBLE SWEET PEA.

I have been favoured by a few sprays of a Sweet Pea named British Queen, a selection from Her Majesty, the colour of both being the same, but the former producing four wings instead of two. Those who are well acquainted with the Eckford Sweet Peas are aware that a few varieties, especially when highly cultivated, in addition to the ordinary number of wings, occasionally produce three. Mr. Angus, Norwood Hall, Aberdeen, has secured one of these abnormalities with four wings, and hopes to go on improving. In some instances there is a standard produced inside the normal one, and with the normal number of wings. At its present stage the double flower is brighter than the single flower, and nothing of the charm of the latter is lost. What may be the end of Mr. Angus's proceedings, when he has attained a really double flower, when standards and wings are both lost in petals in common, is a problem one does not much care to attempt solving. The Royal Caledonian Society awarded its raiser a First-class Certificate at its late show. R. P. Brotherston, Tynninghame Gardens. [In most cases in blooms, kindly sent us by Mr. Brotherston, it is the "standard" that is doubled. Judging from these flowers also, we think the single ones more charming. Ed.]

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Dipladenias.—As the plants cease to flower, plenty of air may be given them with full sunlight. Gradually reduce the supply of water to the roots, and very little will be needed during the winter months.

Primulas.—Encourage growth by giving frequent applications of weak manure-water, varying it occasionally with an artificial manure. Full light may be admitted, with an abundance of air, on every favourable occasion. Any plants not yet finally potted should be attended to at once. Keep them close to the glass.

Cinerarias.—Plants growing in cold-frames may be removed to houses or pits, where a little heat will be available in the event of cold or damp weather. Cool treatment, however, should be given as far as possible. An occasional dose of clear soot-water will be beneficial to them, and other stimulants may be freely given now that the plants are making plenty of foliage. Green-fly will be a source of trouble if not checked in time by fumigating the plants with tobacco.

Poinsettias.—As a few early plants are generally desirable for decorative work, it will be advisable to transfer a batch of the most forward plants to warmer quarters, giving them a position where the heads will be near to the glass. Do not crowd the plants, or they will quickly lose their lower leaves. They may be given weak liquid manure, or a little artificial manure may be put upon the surface of the soil. Later plants may be given a night temperature of 55°, not lower, and air may be freely given them on fine bright days, using the syringe freely to prevent insect pests.

Lachenalias are now making active growth, and should be transferred from cold pits or frames to the greenhouse, where they may be placed on a shelf or in a similar position. When the pots have become filled with roots, an occasional dose of manure-water will materially strengthen the plants.

Freesias.—The most forward plants may be given an intermediate temperature, and a moderate amount of air during fine days. Keep the plants near to the glass, and give them an occasional application of weak manure-water. Later plants will be best kept growing steadily in a temperature that does not fall below 50° at night. Give them plenty of air during the day when the weather will permit. Another batch of bulbs may be potted-up to continue the succession. Place them in a position where artificial heat may be used in the event of frost.

Gardenias.—Plants now producing flower-buds should be thoroughly examined and cleansed. If there be any mealy-bug upon them syringe the plants with paraffin emulsion, and two or three days afterwards go over the plants with a small brush and methylated spirits of wine to kill any insects that may have survived the syringing process. The use of stimulants should be considerably decreased when the plants commence to form their flower-buds. A moist atmosphere and a temperature of 66° to 70° at night will be best for them. Later plants may be given a temperature 5° lower. Re-pot cuttings that have rooted, and put them in brisk heat until established.

Ixoras.—Careful treatment of these plants is most necessary during the winter months. Water must be given with care—too much or too little will prove injurious. The syringe may be used freely, if the temperature at night can be maintained to 65°. Young plants intended to flower in small pots should be plunged where they have the advantage of a mild bottom-heat. When supplying the plants with water, let it be a few degrees warmer than the temperature of the house.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Peaches and Nectarines.—The best season for planting fruit-trees is now at hand, and the gardener should decide what alterations are to be made, that the order for fruit trees may be despatched at once. It is convenient to remove a few of the oldest and weakest trees each season, and to plant a few young ones in their stead. By such a system young trees are continually coming into fruiting condition, and supply large fruit. New and valuable varieties may be thus introduced. If a large number of trees are required, it will be best to go to the nursery and

personally select them. Especially is this advisable in the case of Peaches and Nectarines, because so much of the future welfare of the tree depends upon the kind of stock they are worked upon, and the amount of frost they have had to contend with since they were budded. Select those with clean stocks, free from all knots and roughness, and that have a bright healthy-looking skin. Any that have been cut back several times should be avoided. Peaches and Nectarines, if grown in the open, require a warm position and a well-drained soil. If the situation be naturally cold and wet, a border should be made purposely for them, excavating the soil 2½ feet deep, with a fall of 1 in 25 from the wall to the edge of the border. Lay down a drain and connect with a suitable outlet, and in the bottom of the border put 6 inches of rough stones or broken bricks, and next a layer of turf-sods, with the grassy sides downwards, or failing this a layer of straw fresh from the stables, placed 4 inches thick. A moderately retentive loam is best for Peaches, but lime is also necessary, because their stones contain a large proportion of it. Lime may be added to the loam in the form of finely-broken chalk, or as lime-rubble that has been slaked. One-twelfth part of the whole will be sufficient. Burnt earth, or ashes from the garden-fire are also valuable, in the proportion of one-sixth to the whole in the case of retentive loams, or one-twelfth for light loams. These keep the border porous and sweet, and afford potash and other ingredients to the trees. If the weather be wet at the time of planting, the soil should not be trodden hard, but may be left to settle down naturally. In favourable positions, and in places where trees have previously grown well, it will not be necessary to fully carry out the above directions, but a quantity of fresh soil should always be placed around the roots of trees newly planted. Owing to their susceptibility to frost, these fruit-trees should be planted as early as possible after the leaves commence to fall, and the work should be finished off quickly.

Suitable Varieties.—The best varieties for outdoor culture in their order of ripening are: Peaches, Early Alexander, Early Louise, Hale's Early, River's Early York, Crimson Galand, Goshawk, Dymond, Stirling Castle, Alexandra Noblesse, Bellegarde, Barrington,* Sea Eagle,* Princess of Wales,* and Late Admirable.* In cold districts those marked * are too late to be of any use. Of Nectarines: Early Rivers, Lord Napier, Stanwick Elruge, Balgowan, Dryden, Pitmaston Orange,* Pine-Apple,* Spenser,* Humboldt,* and Victoria.* Those marked * are of no use in cold districts.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

Endive.—Blanching of this crop should not be commenced before the plants are fully grown. By whatever means it is proposed to blanch the plants, they should be perfectly dry before the process is begun. If a few plants be lifted at regular intervals and planted in pits or frames that can be darkened, it is a capital method. Some of the plants may be covered with pots in the open, where they have grown. These can now be obtained similar to those used for forcing Seakale, but only 1 foot in diameter, and 8 inches high, with a knob or handle at the top by which the pots can be conveniently lifted. Flower and Seakale pots may be used for the purpose, but they are less convenient. Some gardeners tie up the plants in the same manner as Cos Lettuce is done. Then cover them with dry Oak or Beech leaves, to prevent frost, damp, or light reaching the plants. If leaves cannot be procured, the plants may be moulded up with just enough dry soil to exclude light and frost.

Spring Cabbage.—The bulk of the Cabbage plants to produce early supplies in spring and summer may now be planted out. Select the strongest plants, and take care to avoid any that are blind, there being very many in such condition this autumn. A space of 18 inches each way will give ample room for early Cabbage that will be cut in a young state. The ground should be enriched with manure, and be carefully dug or trenched. If the soil is stiff, and the garden a cold one, lay up the soil in ridges in the usual way. Put the plants between the ridges and on the top of them. In spring, the best rows should be left, and the plants in the other ones may be used to fill up gaps that have occurred in the former. Care will be required this season not to use any green vegetables that would stand through the winter, whilst there are plenty of tender ones. Owing to the severe drought, winter vegetables will be very scarce in the south.

Asparagus Forcing.—When the stalks of the Asparagus in the outside beds show signs of ripeness, cut them down to the ground-level, and lift a few roots for early forcing in pits or hot-beds. At the same time clear the beds of weeds with the hoe and rake, and afford them a dressing with soot and salt. The large quantity of vegetable matter produced during the growing season by this plant renders the soil in which it grows very poor, and more support must be given Asparagus than other vegetables that are frequently renewed by sowing and transplanting.

Seakale for Forcing.—If early supplies of this vegetable are in request, and no frost has yet arrested growth, it will be well to lift the roots with a digging-fork, so as to crack or check them, after which the soil may be made firm again about the roots by treading. In the course of eight days the leaves will fall off, and the roots may then be lifted to place in the forcing quarters.

Early Rhubarb.—Lift a few stools carefully, not damaging the roots, and leave them fully exposed to the weather night and day. If there be dry, sunny days, however, a mat may be placed over them to prevent the roots unduly shrivelling. The roots will be ready for gentle forcing in the course of six days after being lifted.

Remarks.—All planting and sowing of vegetables and salads, of whatever nature, should be completed during the present month, that they may become rooted before the growing season has quite ceased.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

The Cool-house.—Plants of *Oncidium tigrinum*, *O. crispum*, *O. prætectum*, *O. varicosum*, and its variety *Rogersii*, are now producing their flower-spikes, and strong, well-rooted specimens may be allowed to bloom freely, but it will be best to remove the spikes as soon as the flowers have become fully expanded. If these be placed in water, they will remain fresh for a considerable period. In the case of small weakly plants, no flower-spikes should be allowed to develop. Many growers already know what splendid spikes are produced from the first season's growth after importation, but they quickly exhaust themselves if the plants be permitted to retain them until they fade. Such species as *O. macranthum*, *O. undulatum*, *O. loxense*, *O. serratum*, *O. superbium*, *O. Leopoldinum*, *O. zebrinum*, *O. monachicum*, and *O. lamelligerum* will now require a plentiful supply of water at the root, and shade from direct sunshine. *O. cheiroporum* is one of the prettiest of the small-growing *Oncidiums*; it is now growing and rooting freely, and if needful may be repotted at this time. Grow the plants in shallow pans, with a very thin layer of peat and sphagnum-moss, and suspend them from the roof at the warmest end of the house. The plant requires little water at any time, and great care is needed that no water reach the centre of the growth or the axils of the leaves. *O. concolor*, having completed its pseudo-bulbs, will require less water than formerly, but the bulbs should not be permitted to shrivel. The same treatment is necessary for *O. Marshallianum*, which is now rooting freely, and should be carefully protected from slugs, &c. The pretty *O. cucullatum* is strictly an alpine plant, inhabiting the cooler regions of the Andes. It requires the coolest and dampest position available in this house. Its varieties *Phalanopsis*, *olivaceum*, and *nubigenum* also require a similar position. *O. curtum* and *O. Forbesii* should be placed at the warmer end. *Cattleya citrina* is a cool-growing species that loves abundance of light and air, and thrives best when fastened to a teak raft, and suspended close to the roof, with the leaves and growths in a downward direction. Although the plant is now producing its new growths, it will need but little water until the flower scapes appear. Some cultivators succeed with the plant in an ordinary greenhouse, the principal reason being that it there receives plenty of sunbeats and light with a much drier condition of the atmosphere, consequent upon more air being admitted than in the case of an Orchid-house. The handsome *Odontoglossum coronarium* and its variety *miniaturum* are in full growth, and should be elevated close up to the roof-glass, but out of reach of actual sunshine. Abundance of water is necessary at all times. Plants of *O. Edwardi* that are sending up strong flower-spikes require to be kept thoroughly moist at the root, and care is necessary that the tall spikes do not get too close to the roof-glass, or the whole inflorescence may be lost,

O. Bictonense and its variety *alba* being now in bloom should be watered only very occasionally, as the roots are liable to decay if kept in a moist condition at this period. The three following species *O. grande*, *O. Insleyi*, and *O. Schlieperianum*, may be removed to the cooler and drier part of the intermediate-house, where they will rest; the humidity of the *Odontoglossum*-house during winter is unfavourable to them. *O. Cervantesii*, *O. Rossii*, and its numerous varieties should be suspended in a light position, and copious supplies of water may be given until the flowering season is past. The *Odontoglossums*, especially those of the *O. crispum*, *O. triumphans*, *O. cirrosum*, *O. Pescatorei*, and *O. Halli* sections will now be growing vigorously, and it will be necessary as the new leaves develop to closely examine them for small yellow thrips, which are often very troublesome. The best means to employ for killing these insects is Richards' XL All Vaporiser. Previous to the operation it is advisable to close the house, and damp it well down, so as to create a warm moist growing atmosphere; this will induce the insects to emerge from the axils of the leaves and disport themselves upon the surface, when they may be easily destroyed by the nicotine vapour. *Odontoglossums* will now stand a stronger fumigation than at any other period of the year. The operation may be done at night and the succeeding morning, or on two successive evenings, without any fear of injury to the plants.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of Salisbury, Hatfield House, Herts.

Peach and Nectarine Trees that are growing too strongly, may be brought into a fruitful condition by lifting them partly, or wholly, and root-pruning. The best time to do this is while there are still leaves on the trees. It is common for young trees to grow too vigorously in rich soil, and some varieties when they become good-sized trees are unfruitful indoors. When commencing to root-prune, begin at the part of the border furthest from the tree, and take out the soil without damaging the roots, in the same manner as if the tree was to be transplanted. Trace out strong roots that have grown in a downward direction, and shorten these, and cut off also the damaged part of other roots that were unavoidably injured in the operation by the digging-fork. Preserve all roots of a fibrous nature, and while the roots are bare look over them for suckers, and cut off all that can be seen. Relay the roots in the soil on the same levels and angles as they start from the base of the tree, treading it all firm throughout as the work proceeds. The work needs to be done as expeditiously as possible, so as not to allow the fibrous roots to suffer from long exposure to dry air, and afterwards give the soil a thorough watering. If the trees have been growing in the same soil for some years, a portion of it may be replaced with new material, mixing with it the old as the work proceeds. The new material should be the same as for making new borders, viz., loam, with an addition of mortar-rubble and charred soil. On the few bright days that may be expected afterwards, damp the foliage by syringing. Trees in late houses that are unsatisfactory because the soil has become exhausted, may be much improved by taking out the old soil and replacing it with new material, but this work should be done immediately, so as to allow time for young roots to be made in the new soil while the foliage is still on the trees. Continue to water Peach-trees as often as required, bearing in mind that the soil should not become quite dry, and continue to syringe them on the afternoon of every fine day. Houses that are to be planted with Peach and Nectarine-trees should be prepared beforehand. If the bottom be damp, the base should be concreted, and about 9 inches of brickbats placed thereon for drainage, laid on edge, with the smallest on the top, and from 1½ to 2 feet of soil. There will be necessary a trellis with wires running lengthwise of the house at about 9 inches apart, and about 1 foot from the glass. If the house requires to be painted, the work should be done before the trees are planted. The same remarks would apply to Cherry and Plum-trees.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord Gerard, Eastwell Park, Ashford.

Daffodils will succeed almost anywhere, but they appear to be most at home in a damp and somewhat shaded position, as by the sides of woodland walks or in grass, upon the margins of lakes and running

streams, &c. The bulbs should be planted during the present month. They like a good depth of soil, but are not very particular as to what kind it is. No manure is necessary for them, nor should they be planted at a greater depth than 4 inches. Daffodils are most effective if planted in large clumps. Straight lines should be avoided. The varieties that may be obtained are exceedingly numerous, and some amount of discretion will be necessary in selecting these, as some varieties flower much earlier than others. A good collection of *Narcissus* should afford flowers from February until May. The bulbs, when planted, need not be disturbed for years.

Narcissus.—The *Polyanthus Narcissus*, as distinguished from the *Daffodils*, are very useful for supplying flowers for cutting. Plant them in a good soil, and they also may then be left for years before replanting will be necessary.

Lilium candidum.—This beautiful white-flowering Lily should be planted during the autumn months. Any garden soil suits it, but a good rich loam is best, and the bulbs should be planted where they need not be disturbed. It is a plant which greatly resents frequent transplantation.

Dahlias.—In places where these have been cut down by the frost, the tubers should be lifted, and placed in shallow boxes, covering the tubers with light sandy soil or ashes. Afterwards store them in a position where frost will not reach them during winter.

Marguerites.—Take cuttings of *Marguerites* and insert them round the margins of 5-inch pots. Place them on the shelf of a house where the temperature does not fall below 55°.

THE APIARY.

By EXPERT.

Feeding-up and Packing for Winter.—This should now be completed. If it is not, the bee-keeper must bestir himself and feed as fast as the bees can take the syrup. Make good syrup, not thin and watery stuff, or the bees will have to evaporate or separate the excess of moisture at the cost of "wear and tear" to vitality. Feeding generally induces breeding, and thus, if done early, the brood hatches out early in October, and so strengthens the colony. Packing for winter must also be attended to shortly; if you have any queenless colonies on hand, unite them to those that have a queen.

Re-queening in Autumn.—Introducing queens to queenless colonies, unless the latter are very strong in bees (which is not often the case at this period of the year) is a waste of money, and usually brings disappointment to the purchaser, besides giving no satisfaction to the dealer or breeder. Pleased and satisfied customers furnish the best advertisement one can have. The matter of superseding an old queen by the introduction of a young one in its place at this period is a different matter altogether, and any stock which is known to be headed by a queen of 1896 that has done well during 1897 and 1898 should have its queen deposed in favour of a young one of 1898. There are exceptional queens which do good work in the third year, but it is not good policy to depend on the chance of this. It is best to keep young prolific queens at the head of colonies.

Planting for Bees; Painting Hives.—Now is the time to sow hardy annuals to stand the winter and bloom early next season. Hive roofs and covers should be painted where required, so that the interiors may be dry through the winter months. Chaff cushions are good top-wraps during the winter, such cushions being excellent heat retainers. They may be made of cheap unbleached calico, cut the size of the hive inside, and if about three-parts filled they will tuck in at the sides better than a cushion quite full, the calico should be washed before using it, or it will most likely get mildewed in damp and foggy weather.

Winter Passages.—It is a good plan to give passage to the bees from one comb to the other, so that they may not starve in long spells of very severe weather. Lay three little strips of wood side by side across the tops of the frames when packing up for the winter. The strips must be large enough to allow the bees to pass easily, and bevelled at the ends, so that the quilt may lie close on the frames at the outsides all round where the projections of brace combs are left on the top of frames. These, of course, allow passage-way over the tops of frames.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER. Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	Oct. 17	Eight days' Unreserved Clearance Sale of Nursery Stock, at the Nurseries, Sunningdale, Berks, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms. Clearance Sale of Stove and Greenhouse Plants, at 131, Acre Lane, Brixton, S.W., by order of Mr. T. A. Dickson, by Protheroe & Morris.
TUESDAY,	Oct. 18	Annual Trade Sale of Shrubs, Conifers, and Climbers, at the Wood Lane Nursery, Isleworth, by order of Messrs. Chas. Lee & Son, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	Oct. 19	Great Sale of Liliun longiflorum, Palm Seeds, &c., at Protheroe & Morris' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	Oct. 20	Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Oct. 21	Dutch Bulbs, at Protheroe & Morris' Rooms. Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—49° 8'.

ACTUAL TEMPERATURES:—

LONDON.—October 12 (6 P.M.): Max., 59°; Min., 44°.
PROVINCES.—October 12 (6 P.M.): Max., 57°, W. Ireland; Min., 48°, Aberdeen.
Dull; general absence of rain; heavy dews.

The reciprocal action of Scion and Stock. It is a curious circumstance, that practical gardeners of the greatest experience of the generation now passing away, denied almost to a man that there is any action of the stock on the scion, or of the scion on the stock; and yet these men, and their predecessors, had been grafting and budding from time immemorial. They derived advantage from the process as a quick and convenient mode of propagation, but it is only comparatively quite lately that they have admitted that there are other benefits to be obtained. A pomologist grafts an Apple he wishes to propagate on the Paradise stock with the certainty that his Apple will be of more compact habit and of earlier and earlier fertility than if grown on the Crab or on its own roots. The vegetative system of the plant will be checked by the grafting, and by *balancement organique*, as the French say—by compensation, the development of flowers will be proportionately enhanced. Still, it is rare that a gardener will admit any further influence than what has been alluded to. He overlooks or ignores the many cases in which he grafts one Vine upon another with a view of curing some defect, such as cracking, or for some other cause, which renders his denial of reciprocal action somewhat inconsistent. It must be admitted that such effects are so rarely visible on the surface that they must be looked on as exceptional; but there is a great deal that we do not see, but which we may expect to see in the future.

The physiologist was also unwilling to admit that, as a rule, there was direct communication between stock and scion, but he recognised the exceptions, and found them, on investigation, more numerous than he had at first expected. These were the days when we were taught that the plant was made of little membranous bags or sacs, called cells, more or less filled with fluid when alive, but so perfectly closed and unbroken at the surface that no passage of fluid from one to the other was possible, except

by means of filtration by "osmosis." By virtue of this process a thinner fluid passes through an intervening membrane to mix with a thicker fluid on the other side.

No doubt, this process of osmosis is a powerful aid in ensuring the movement of fluid in plants. A discovery made some few years ago by a Cambridge botanist, Mr. WALTER GARDINER, and since abundantly confirmed, has, however, thrown a new light on the subject. In the living cell there is, as everyone knows, a thick, semi-liquid substance, which is known as "protoplasm." In former days each cell was supposed to have had its mass of protoplasm so long as it was alive and active, but any passage of protoplasm from one cell to another, or any admixture of the plasm of one cell with that of another was considered impossible. Mr. GARDINER'S discovery consisted in the proof that there were in that portion of the cell-wall between two cells, extremely minute tubes opening up communication from one cell to another, and permitting the passage of threads of protoplasm from one cell to another. Now-a-days a plant, instead of being looked on as an aggregate of independent cells, is considered rather as an independent whole, consisting of cells which are in communication, real or potential, throughout the whole plant. Of course, such a discovery revolutionises vegetable physiology, and we may certainly look to this "continuity of protoplasm" to explain much of what is still mysterious in the matter of bud-variation (sporting) and grafting.

We have been led to these remarks by the perusal, in the *Comptes Rendus* of the French Academy of Sciences, of the experiments of M. LUCIEN DANIEL. Cabbages, he says, can be improved by grafting appropriately-selected sorts one upon the other, and by sowing the seeds of the scion (*Création de Variétés Nouvelles*, par la greffe, April 30, 1898). Similarly variation in the common "Jack in the Hedge," *Alliaria officinalis*, may be obtained by grafting it on a Cabbage.

Pursuing his researches, M. DANIEL has grafted the wild Carrot on a cultivated form of stump Carrot. These two plants differ very materially, both in foliage and in the character of their roots. When grafted the wild Carrot grew well, utilising the reserves in the stock on which it was grafted, and ultimately produced seed larger than those of the check-plant grown for comparison. The seeds were sown side by side with some from the ordinary wild Carrot. The seedlings of the latter germinated in the usual manner, but those derived from the graft showed many differences which we have not room to cite here. Generally, we may say that the differences in the seedlings were manifested: 1, in the seed-leaves or cotyledons; 2, in the precocious development of seed; 3, a change in habit, colour, and hairiness; and 4, a swollen condition of the root, but without change of colour.

M. DANIEL'S experiments are recorded in the *Comptes Rendus*, July 11, 1898, and show the influence of the stock on the posterity of the graft. This influence determines not only variation in general, but a more or less complete admixture of the characteristics of the stock and of the scion, so that in the offspring of the scion a kind of disturbance (*affolement*) arises resembling that caused by crossing or hybridisation.

From a practical point of view the experiments reveal the possibility of "improving" wild plants by grafting, and subsequently sowing the seeds from the graft, and selecting

the seedlings in the ordinary way. M. DANIEL does not tell us how he grafted his wild Carrot. Of one thing we are certain: no gardener or farmer in this country will think it worth his while to make such experiments, whilst the paucity of research-stations does not augur well for the experiment being tried here at all. Thus, whatever comes of it, our neighbours will get the benefit, and we shall have to pay for what we might have raised ourselves.

NATIONAL DAHLIA SOCIETY.—The official catalogue, which has been issued this summer, contains on some fifty pages an account of the Dahlia, its bibliography, selected lists of the best varieties of each type, fancy, Pompon, Cactus, decorative, and single Dahlias, the latter grouped as self, fancy, Tom Thumb, and Cactus varieties, together with an alphabetical list, with name of raiser and date of introduction of Dahlias of all sections at present in general cultivation in Great Britain. Selections of varieties which make an especially effective display in the garden are given, as well as of those most suitable for exhibition. The catalogue can be obtained from the Hon. Secretary of the National Dahlia Society, Gunnersbury House, Acton, W. Price 1s. to non-members.

"KEW BULLETIN."—The number for the present month contains an exhaustive account of the Para rubber, *Hevea brasiliensis*, a native of the damp, shady forests of northern Brazil, where the temperature is very uniform, ranging from 75° at night to 87° at mid-day. The first half of the year is very wet, the other half relatively dry. Thanks to Kew, the trees have been sent to Ceylon, where they have borne seed, so that the number of trees on private estates is estimated at 200,000. The rubber collected in the Ceylon Botanic Garden has been valued at the highest market price ruling at the time, so that, on the whole, there is a prospect of a good return on the capital invested. Reports from Tenasserim and the Straits Settlements are also encouraging. In other colonies the experiments have not been continued sufficiently long to give commercial results. The samples from Trinidad are reported as excellent.

MADRAS.—The *Kew Bulletin* reports that Mr. C. A. BARBER, lately superintendent of the Agricultural Department of the Leeward Islands, has been appointed Government botanist for the Madras Presidency, in the room of the late Prof. LAWSON.

MEETING OF THE GHENT CHAMBRE SYNDICALE.—At the Meeting of the Chambre Syndicale des Horticulteurs Belges et Société Royale d'Agriculture and de Botanique of Ghent, held on October 2, the following awards were made:—Certificates "de floraison" to M. F. Van Driessche, for *Leucanthemum uliginosum*, and also for *Caryopteris mastacanthus*. A Cultural Certificate was awarded to the same exhibitor for *Acacia floribunda*; one to M. Aug. Van der Heede (*à l'unanimité*), for a collection of *Cyperus alternifolius*, eight months under cultivation; and to M. Alloncius for *Aralia Kerchoviana*. Honourable mention was allotted to M. Aug. Van der Heede, for a collection of foliage Begonias.

BACTERIA IN HAILSTONES.—If there is one place in which we should not have expected to find these organisms it would be the interior of a hailstone. Nevertheless, Mr. HARRISON in the *Botanical Gazette* for September, describes sundry forms met with by him. As many as 955 were found on the average in each hailstone. One of the bacteria was found to be poisonous to rats. These are facts for the Hailstorm Insurance Company to ponder over. It may well happen that the bacteria introduced by a hailstorm may be more destructive than the stones themselves.

"BOTANICAL MAGAZINE."—The plants figured in the issue for the present month are:—

Cyrtosperma senegalense, Engler, t. 7617. — A tropical African Aroid, with tufts of long-stalked,

hastate leaves, long-stalked spathes, like those of the common Arum, green, with broad stripes of purple, and short, blunt, purple spadices. Kew.

Cytisus purgans, Boissier, t. 7618.—A very handsome dwarf Broom, with a profusion of yellow flowers. It is a native of Central and Southern France and of Northern Spain. Kew.

Amelanchier canadensis var. *oblongifolia*, Torrey and Gray, t. 7619.

Peijoya Sellowiana, Berg., t. 7620.—A myrtaceous shrub, with large pendulous flowers; petals whitish on the outer, crimson on the inner surface. The fruit is an oblong-ovoid tubercled berry, about the size of a Walnut, and possessing an aromatic flavour and perfume. It was introduced into cultivation by M. Ed. ANDRÉ, and by him figured and described in the *Revue Horticole*, 1898, p. 264.

The varieties used are *acris*, *densus*, and of taller ones *G. Harris* (white), *Robert Parker*, and others. In spite of their beauty, such plants seem to us out of place in such a situation—but that is a matter of taste.

THE SHOW-HOUSE AT KEW.—Those who have to keep their conservatories gay at all seasons should make a point, if possible, of visiting this house at frequent intervals. Not only is it in general ornamented with the popular decorative plants of the season, but new plants, or plants not generally known, are made use of in order that their ornamental character may be tested. This is a matter of pre-eminent importance at Kew. We can see the ordinary flowering-stuff like the bedding-plants anywhere and everywhere. It is to Kew that we

are white. 3. Avoid fungi having a milky juice, unless the milk is reddish. 4. Avoid fungi in which the cap, or pileus, is thin in proportion to the gills, and in which the gills are nearly all of equal length, especially if the pileus is bright-coloured. 5. Avoid all tube-bearing fungi in which the flesh changes colour when cut or broken, or where the mouths or the tubes are reddish, and in the case of other tube-bearing forms experiment with caution. 6. Fungi which have a sort of spider-web or flocculent ring around the upper part of the stalk should in general be avoided.

FRUIT CROPS IN THE UNITED STATES.—As there seems to be some difference of opinion on this matter, we give the following brief note, received from the head of the State Department, just as we



[Photograph by G. Denny & Co., Teignmouth.]

FIG. 85.—WALL AT GLENDAVAGH, TEIGNMOUTH. (SEE P. 291.)

Rhododendron rubiginosum, Franchet, t. 7621.—A Western Chinese species, with lanceolate leaves, thickly beset on the lower surface with rust-coloured scales; flowers of moderate size, pink, in terminal clusters. It is nearly allied to the North American *R. punctatum*.

THE VICTORIA MEDAL.—The recipients of the Medal will, we learn, shortly receive a diploma on vellum, notifying to all and sundry that its possessor has, with the gracious assent of Her Majesty, been presented with the Victoria Medal by the Royal Horticultural Society.

ASTERS AT KEW.—Those who favour the introduction of herbaceous plants on terraces or in association with architectural features, have now an opportunity of seeing the effect of large masses of perennial Asters in front of the Wood Museum at Kew.

look for novelties and plants of unusual interest. Just now Asters in pots, such as *A. dumosus*, *acris*, *Amellus lævigatus*, and others, furnish excellent decorative subjects.

"LITERATURE" says that Dean HOLE is writing a book on *Our Gardens* for the Haddon Library.

THE DETECTION OF POISONOUS FUNGI.—The *Botanical Gazette* (Chicago) for September publishes some notes by Dr. W. G. FARLOW, prepared at the request of the U.S.A. Department of Agriculture, by the aid of which edible and poisonous fungi may be distinguished. The following rules are given for the beginner:—1. Avoid fungi when in the button or unexpanded stage, also those in which the flesh has begun to decay, even if only slightly. 2. Avoid all fungi which have stalks with a swollen base surrounded by a sac-like envelope, especially if the gills

are going to press:—Respecting Apples, there is, in general, a continued downward movement as to condition, only four States reporting the slightest improvement over the last unfavourable report. As to Peaches, taking the States in which these form a commercial crop, together with those in which the production is small, or not more than sufficient for the local demand, there is probably about two-thirds of a full crop. The conditions, however, vary greatly, ranging from 108 down to half a crop for some of the States ranking next to Georgia along the Atlantic slope. In the States from New York to Virginia inclusive, the condition ranges from 10 to 49 per cent. of a full crop. In the middle States the averages are somewhat higher; but in few cases do they indicate more than two-thirds of the normal. In Grapes the condition is in the main very satisfactory. On the other hand, there are no notably unfavourable conditions; and while no average for the entire

country can be established, owing to the want of a standard of comparison, the general outlook may be regarded as highly favourable.

VARIATION OF ALPINE PLANTS UNDER ALTERATIONS OF TEMPERATURE.—M. GASTON BONNIER contributes to the *Comptes Rendus* for August 8 the result of his experiments on the characteristics of alpine plants as modified by alternations in temperature. He thus sums up his paper:—Comparison was made between plants of the same species from the same root, some kept continually at a very low temperature (4° to 9° C.), others submitted to the usual variations of temperature in the environs of Paris, and yet others kept at a very low temperature during the night and in sunshine during the day. These last, subjected to extreme alternations of temperature, are more dwarf than those of the two former sets, the internodes are proportionally shorter, the leaves smaller, thicker, firmer, the flowering is more rapid. It is, therefore, possible to produce artificially the characteristics of alpine plants in specimens grown in the open by submitting them to a daily alternation of temperature equivalent to that which affects them in high mountainous regions.

A LIVING STATUE OF NAPOLEON I.—A gentleman, residing near Paris, named M. D'AGUILLÈRES, is the proud possessor of a unique statue of NAPOLEON I. His gardener has clipped a large shrub in such a way that it is a perfect model in evergreen of the "Little Corporal." Here he stands in his favourite attitude, wearing a cocked hat, sword, and with snuff-box in hand. Every detail of the face and figure is represented. Hundreds of visitors used to be attracted to see this curious achievement of the clever gardener, but when the present owner came into possession he closed the gates to all comers. The greatest care is necessary in order to preserve the likeness of the renowned warrior, and every day the gardener spends a considerable time in clipping off dead leaves, and cutting away an occasional branch that gets too thickly foliated. The signature of the great NAPOLEON is reproduced at the foot of the statue in Coleus plants.

HINTS TO INTENDING EMIGRANTS.—A circular has just been issued from the Emigrants' Information Office, 31, Broadway, Westminster, S.W., from which we make the following extracts: There is an excellent opening in the colonies for men with a little capital, who can take up land for fruit-growing, dairying, or general farming. In Ontario, and the north-west of Canada, free homesteads are given to settlers on simple conditions of residence and cultivation, the 160 acre grants in the north-west being open land, requiring no clearing. Western Australia is the only one of the Australasian Colonies which gives free homesteads: the Free Homestead Act there dates from 1893, and has lately been much used; 562 of such farms, of an average size of 151 acres, besides 54 homestead leases, representing nearly 72,000 acres, were taken up in 1897. In the other colonies, land (mostly uncleared) can be bought from 2s. 6d. per acre. But settlers must remember that the conditions of farming are necessarily very different from those they have been accustomed to here, so that they should not buy or rent a farm immediately on arrival, but should work for twelve or eighteen months with some colonial farmer, till they have acquired experience of soil, climate, and other local conditions. If a man has a working family he could cultivate a ten-acre block for fruit-growing, without the expense of hiring outside labour. There is a demand for experienced farm-hands on farms, orchards, and vineyards in parts of Queensland, Western Australia, and New Zealand; in Canada the demand is over for this year; in South Africa, farm labourers are nearly always natives or other coloured persons.

STOCK-TAKING: SEPTEMBER.—An analysis of the Board of Trade Returns for the past month gives a reassuring aspect to the prospects of trade generally. There is an increase in the value of both imports and exports. The imports for the past month are in excess of those for September, 1897, by £425,648. The figures for the nine months show an increase of

just £14,902,477. As to the month the sections showing a decrease are "animals, living and for food," "articles of food and drink duty free," "metals," "chemicals, &c.," and "manufactured articles." Among the items showing an increase are Wheat, as to quantity, 606,970 cwt.—there is a decrease of £156,875 in the value; this may serve to show the change in the market in the twelvemonths, though the price of bread is slow to follow the downward tendency of the raw material. Barley has gone up by £183,219; Wheat-meal and flour, £138,628; Currants give £149,218 as the increased value; wine shows £60,527. The following is our usual extract from the summary table:—

IMPORTS.	1897.	1898.	Difference.
Total value ...	£ 35,179,633	£ 35,605,281	+425,648
(A.) Articles of food and drink—duty free ...	12,576,367	12,195,318	—381,049
(B.) Articles of food and drink—dutiable	2,626,022	2,668,844	+42,822
Raw materials for textile manufactures ...	1,998,536	2,617,136	+618,600
Raw materials for sundry industries and manufactures	5,463,168	5,706,649	+234,481
(A.) Miscellaneous articles ...	1,023,637	1,261,991	+238,354
(B.) Parcel Post ..	76,502	84,573	+8,071

As usual, the table for the month of imported fruits, roots, and vegetables is a very interesting one, always repaying examination. It is as follows:—

IMPORTS.	1897.	1898.	Difference.
Fruits, raw:—			
Apples ... ..bush.	247,653	248,126	+473
Cherries ... .."	...	...	...
Grapes"	217,790	274,835	+57,045
Pears"	311,575	169,064	—142,511
Plums"	289,014	257,492	—31,522
Unenumerated"	251,154	328,793	+77,639
Onions"	755,499	664,376	—9,123
Potatoes ... ..cwt.	91,895	77,721	—14,174
Vegetables, raw, unenumerated ... ..value	£112,747	£162,867	+£50,240

The returns of—

EXPORTS

are this month of a more satisfactory nature than have been noted of late. Coal-getters and engineers are now hard at work endeavouring to make up for the time lost in settling disputes by the cruelly cruel method of the strike. The increase in exports over those for the same period in 1897 is placed at £1,639,810—made up thus:—September, 1897, £18,305,275, as against £19,945,085 for the past month. The very recently noted heavy falling off is now reduced to £3,262,018 for the past nine months compared with the same period last year. Exported articles of food and drink increased in value by £159,085; raw materials went up by £573,616; chemicals and chemical preparations, &c., £35,860.

QUERCUS COCCINEA.—In the *American Botanical Gazette*, July, p. 56, mention is made of an Oak, the male flowers of which bore styles in place of stamens. Such changes are, of course, by no means uncommon in monœcious or dioecious flowers, but we do not remember to have met with any such change in the Oak, or to have seen any record of the fact.

THE "HOGG" MEDAL.—As stated in our last issue, there were two of these medals awarded on the morning of the first day at the Palace Fruit Show; subsequently, however, a third was awarded to Messrs. G. BUNYARD & Co., Maidstone. Three of the principal fruit-tree nurserymen were thus honoured on the first occasion of presenting this medal.

BUYERS OF FRUIT TREES MUST HAVE PATIENCE.—The lateness of the present season, and the extraordinary drought, is causing the fruit-tree nurserymen no small amount of trouble. Tree-planters occasionally favour the methods of the

ancient gardeners, and desire to plant their trees upon or before a certain date. The trouble such customers may cause nurserymen this season may be gathered from the following letter which we have received from one of the largest growers in the trade:—

'According to the Calendar, we should now be hard at work executing orders for Roses, Gooseberries, Currants trees, and Conifers, and even lifting some few Pear and Plum trees. But, alas! the land below the surface crumb is as dry as a brick, making all this work impossible; and meantime we are bombarded with letters such as—"I am told that now is the very best time for removing the things I ordered;" "If you are unable to supply what I ordered, you should have said so at the time;" "Unless my order is forthwith executed, please consider it cancelled, that I may be better served elsewhere." Well, what for a remedy? Why, patience. Practically, the season is three weeks late, and as no fibrous roots can be got out of the hard soil, my kind friends, trust to your nurseryman to do his very best. Apples are yet in full growth, and practically a week's heavy rain is wanted before lifting can be started. I send these few lines on behalf of myself and fellow nurserymen, as we, I feel sure, are only too anxious to do our best, and are not responsible when the clerk of the weather and the Calendar do not agree.'

THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the session 1898-99 will be held at the above premises on Monday, November 14, 1898, when the President, Mr. ROBERT VIGERS, will deliver an opening address. The chair will be taken at 8 o'clock.

THE CARDIFF GARDENERS' ASSOCIATION held a meeting on the 5th inst., when Mr. T. COOMBS, gardener to Lord LLANGATTOCK, The Hendre, Mon., read an instructive paper on the Hardy Fruit Garden; its Formation and Planting. No fewer than twenty members were enrolled during the evening.

THE NURSERY, FLORIST AND FRUIT-GROWERS' SYNDICATE, LTD.—From a circular to hand, it appears that this Syndicate is being formed for the purpose of acquiring the firm known as Edgwarebury Farm, which is upwards of 170 acres in extent, and is situate in Edgware Parish, Middlesex, about 1½ miles from Edgware station on the Great Northern Railway, and about the same distance from Mill Hill station, and is therefore within 9 miles of town, and comprises farmhouse, cottages, and most commodious farm buildings. The share capital is to be £12,000; and 4,500 preference-shares, and 7000 ordinary shares, are now offered for subscription.

HUNGARY.—We are requested by the Austro-Hungarian Minister of Agriculture to publish the following note:—"In consequence of the lamented death of our Queen ELIZABETH, the Minister of Agriculture of Hungary has desired that the fruit, vegetable, and flower-show in connection with the National Horticultural Society, as well as the fruit-fair of Budapest, be not held this autumn, but postponed until next year."

PUBLICATIONS RECEIVED.—*The Growth of Sugar-Beet and the Manufacture of Sugar in the United Kingdom.* By Sir John Bennet Lawes and Sir J. Henry Gilbert. (From the *Journal of the Royal Agricultural Society of England*.) Spottiswoode & Co., New Street Square, London. An unfavourable prognosis is given as to the commercial success of this crop in this country.—*Memoranda of Field and other Experiments on the Farm and in the Laboratory of Sir John Bennet Lawes, at Rothamsted, Herts.* by Sir J. Henry Gilbert.—*The Rothamsted Experiments, Plans and Summary Tables for Reference in the Fields, 1898.* A most serviceable summary of the results of these most important experiments.—*The Yorkshire College, Leeds, Victoria University. Prospectus of the Courses in Agriculture, Session 1898-99.*—*Practical Rose-growing*, by John Harkness. A second and up-to-date edition of a handbook for amateurs on an ever-popular theme. The first part deals with situation, soil, manure, selection of plants, planting, propagating, Roses under glass, and choosing, developing, and staging Exhibition Roses. The second portion deals with Exhibition Roses, Garden or Decorative Roses, and Roses for town gardens, ending with a monthly calendar of work. The whole is plainly written, and if reading would make a successful cultivator those

who look over this book would soon become skilful. —*The Culture of Flowers from Seeds and Bulbs*, and *The Buying and Home Testing of Seeds*. Two handbooks, by E. Kemp Toogood and William Toogood respectively (Southampton: Toogood & Sons). Eminent practical pamphlets; that devoted to bulbs and flowers contains cultural directions and many little pictures; the one on seed-testing will interest amateur growers, and suggest some experiments which they will like to try. —*Nature Notes*, October. —*Information Gazette, touching Divinity, Learning, and Physic*. Edited by the director of the Information Office, Oxford, Mr. C. C. Old, of Magdalen College. "The essence of the Gazette is to offer such suggestions and comments, based on reliable foundation, as shall prove of practical use in the given subject." An original, some will say refreshingly eccentric periodical.

large yellow self flower, of good substance, and a free bloomer. Cycle is a bright yellow, with slight purple shade; it has stout petals, with a deep purple margin. Edgar is also a large and showy bloom; whilst for a free-blooming scarlet and a most useful sort in borders, Cecil is one of the best. Besides the Carnations was a large number of choice Picotees. Some of the new Cactus Dahlias were in bloom, and the show and Pompon varieties were expected to make a fine display.

Passing into a greenhouse used as a flowering-house, the most noticeable feature was the display of Fuchsias on the roof; the stem of one of these was 6 inches round. The growth is carried up and trained on the roof, and a space of 20 feet on one side of this span-roof house is covered with two sorts, Elegans and President. This house contained varieties of Achimenes in baskets, also hanging from the roof.

14 feet high. The top of the wall inside the grounds is almost level with the borders, and so can easily be reached. The wall was originally built so that every other stone stood up some 8 or 10 inches above its fellows, with corresponding hollows between. These latter are utilised by having slate or tiles cemented to the sides, holes for drainage are left at the bottom of the slate; soil is put in these recesses, and everything of a free-flowering character planted from the inside. These have grown freely, and crept over the wall outside, so that the top of the wall presents a dense mass of colour, in which Ivy-leaf and zonal Pelargoniums, Godetias, Zinnias, Coreopsis, Petunias, Marigolds, Campanulas, Salvias, Marguerites, Lobelias, Nicotianas, &c., all contribute a part. A space on the wall the whole of its length immediately below these plants is covered with a dense-growing Sedum, so that the flowers had a green foil below. This picture cannot be seen from the inside of the grounds at all; the public have the pleasure of gazing upon this unique display, and all visitors to Teignmouth may enjoy the sight, since it is within five minutes' walk of the station. The proprietor, H. Hammond Spencer, Esq., is delighted to contribute to the pleasure and enjoyment of those who may favour this spot with a visit.

HOLLYHOCKS AT DULWICH.

It is pleasing to see that efforts are being made to revive the culture of Hollyhocks, which is undoubtedly one of the best hardy plants we are ever likely to possess in our English gardens. The photograph sent (see fig. 86) was taken three years ago, and we have here for many years, within 6½ miles of Charing Cross, had a display equal to it. If this hardy plant be treated rationally, we may (in spite of the disease) obtain it in as good condition as our grandfathers, whose mistaken notions of its requirements all but killed the plants.

The fungus found its opportunity in the unnatural and coddling processes to which the plants were subjected for the purpose of propagation. Several years ago, during a long frost, our plants were unprotected. The soil is London clay, and was frozen to a depth of nearly 2 feet. Many shrubs were killed to the ground. The hardy Cabbage and every bit of green in the kitchen garden perished, but the Hollyhock came through it uninjured, and the photo which was taken the following summer will show this.

There are several ways of propagating the plant without employing heat. The most natural and quickest is from seed, and fortunately it comes pretty true, if not to colour, to character, so that if seed from a good strain be sown, ninety per cent. may be depended on to produce double flowers just as beautiful for garden decoration as the choicest of named varieties.

The seed should be sown thinly in drills in the open ground about the last week in May, and early in autumn the plants may be put out into deeply-dug and well-manured ground. It is important that this work be done early, that the long whip-like roots may have time to get well down into the earth before the next summer. If the plants be moved in the spring these roots get broken, and are then not able to supply the necessary food to the plant during summer. By keeping the colours separate, a fair proportion of each may be planted. It will be found that the darker colours come thickest, and if the seed had been mixed there would be a greater proportion of them put out, and the whites and the yellows may be almost absent.

In addition to the cultivation already mentioned, the necessary staking, &c., during growth, is all the plants require. Artificial manure is useful in the spring, and the plants may be mulched with advantage.

Waterings are not absolutely necessary if the ground has been well prepared, but otherwise they will be required. I sow some seeds every year so as to maintain a supply of young vigorous plants, and they are planted in fresh quarters each season, being allowed to them only two years. Although we have the disease more or less, each season we have been able to laugh at it, as it does us little harm. *B. R. L., Dulwich.*



FIG. 86.—HOLLYHOCKS ADORNING A BORDER AT DULWICH.

SOME DEVONSHIRE GARDENS.

(By our Special Commissioner.)

GLENDAVAGH, TEIGNMOUTH.—So often has it been the case that Chrysanthemum blooms from these gardens have secured high honours at the exhibitions in the western counties, that finding an opportunity to visit Mr. G. Foster, I was glad to avail myself of it. By no means are the Chrysanthemums grown to the exclusion of other plants, for here the taste would seem to be a very broad one, and almost everything that can be grown has a place, and is well looked after.

The border Carnations were the chief feature at the time, for my visit was in August. Some are known named sorts, but by far the large portion are seedlings raised on the place, some of them having been in cultivation for four years. These seedlings include some of much merit, that have been distinguished by names. *Devonia* is a full and distinct flower, and, like almost all the varieties raised here, does not split its calyx; the colour is terra cotta ground, with scarlet and purple flakes. Mrs. G. Foster is distinct in habit and growth, producing a

A sunk pit is devoted to the culture of Muscat Grapes, in which were some bunches of fine size. Black Hamburgh, Buckland Sweetwater, Alicantes, Lady Downes, &c., in other divisions were in every respect satisfactory. A fine lot of Peaches and Nectarines were ripening inside, and in one division espaliers were seen along the centre of a span-roof house, and here were some excellent trees full of fruit. In the kitchen-garden were splendid Apples, chiefly on espaliers. The Pears were not quite so heavy a crop.

The Chrysanthemums were looking well, not too strong, but having clean hard growths. These plants were being afforded rich top-dressing, and over this new soil oyster-shells and pieces of tile or slate were laid. These keep the intense sun-heat from the top of the soil, and it is found that the roots run into the new soil right to the under-side of the shells, &c.

The pleasure-grounds, though not extensive, were in excellent keeping. I was much impressed by the boundary stone-wall. This portion at one part of the arden is just 120 feet in length, and about 12 or

HOME CORRESPONDENCE.

BIRDS IN THE GARDEN.—In your last week's issue, p. 277, "S., Abbey Wood" refers to some recent letters in the *Morning Post* on the above-named subject. The writer assumes that the writers of the letters in question are from a district where birds are not numerous. I beg to assure him that quite the opposite is the case. I have lived over a dozen years in Kent, but in this part of Berkshire there are as many birds to the acre as there are in a mile of the parts of Kent I am familiar with. Further, it is a well-kept garden, and has a proper provision of garden netting. Speaking from a gardener's point of view, the only bird I consider it necessary to destroy is the bullfinch. For the past eighteen years I have had charge of a large garden, practically in a wood, where birds are very numerous, and I have succeeded in keeping a large family well supplied with the usual produce of a gentleman's garden; but I think your correspondent "S." has not read his *Gardeners' Chronicle* carefully, or taken an interest in the above subject for any lengthened period. The subject has been frequently treated in the pages of the *Gardeners' Chronicle* by able writers like Mr. Harrison Weir. Upon the sparrow question I pass no opinion, only to remark, in passing, that although they are very numerous here, they never attack my Peas; but I have noticed them very busy in the corn fields making a nice fringe of threshed-out grain on the Oat-sheaves, and looking at you as much as to say, "We don't want your Peas; Farmer Giles provides us with plenty of grain, and allows us to eat it in peace and quietness." With respect to the Mountain Ash berries, I think the writer must be a young man to notice that fact, as in dry summers like the past, missel-thrushes and blackbirds always eat them, and quite right, too, as some compensation for destroying the insect pests during the previous nine months of the year, and Nature always has compensations to those with eyes to see and gratitude to be thankful. *R. M., Newbury* (writer of several letters to the "Morning Post").

—I note that "S., Abbey Wood," on p. 277, refers to the damage done by birds. We, too, have somewhat suffered by their frequent ravages upon the Pea-quarters, Strawberry-quarters, Plum-walls, and also Apples and Pears; but with the free use of fish-netting, these can be easily kept away. Not very long since we were seriously attacked by maggots upon the Cabbage and Cauliflower-quarters—in fact, all varieties and kinds of Brassica were attacked, and I immediately set boys to work to pick them off and destroy them. I have been visiting during the past fortnight, and have, during my rambles, seen Cauliflowers, &c., very much injured by these maggots. But in these gardens I saw one morning dozens of blackbirds and thrushes attacking them most voraciously, and in a few days were anxiously looking for more, and indeed were looking about as carefully as a boy who had lost his only sixpence, but they had cleared them all off, and before very much damage had been done. I have also seen our small friends, the sparrows, wrens and tits, picking off aphids from the Rose-trees, and in this way they have done an immense deal of good. This season has been a very trying one for the birds, as hereabouts there is very little water, and the birds have attacked the fruit, perhaps a little more than usual; but as I said at the commencement of this short note, we at once put netting on all the important fruit-crops. The wasps, flies, and bees, have done much more damage than the feathered tribe. We have just paid for 158 wasp-nests, destroyed within half-a-mile of these gardens. *W. A. Cook, Compton Bassett, Calne, Wilts.*

SPRUCES DROPPING THEIR LEAVES.—It is certain that the premature defoliation described by your Irish correspondent (p. 277), was due to the attack of insects. In two young mixed plantations on hill-side property here belonging to the University, about one-half of the Spruces were affected in a similar way in May. The cause was not apparent at first sight, the insects being minute, and of the same colour as the needles. A closer examination showed that the infested branches were crowded with aphides (visible by aid of hand-lens in photograph enclosed). The sticky substance, copiously secreted by the insects, gave a glistening appearance to badly-infested trees. Before long the leaves died, and when the trees were shaken, the foliage—almost the whole of it in some cases—fell in a shower. The obvious explanation of this was, that the stomata had become

thoroughly clogged with the secretion. Recent inspection of the trees shows that the growth has been greatly retarded by the infestation. Some of the foliage subsequently produced has died, and much remaining green is not nearly so strong as that of the trees which escaped the attack. *John H. Wilson, D.Sc., St. Andrews.*

BLUE FLOWERS.—Bright blue flowers are welcome at any time, but doubly so are the lovely flowers of *Salvia patens*, the ultramarine colour of which contrasts so finely with the *Crocasmia imperialis* and *Lobelia fulgens* growing by its side. *Ceanothus Gloire de Versailles* continues, like the *Salvia*, to give us its welcome, if pale, blue, flowers in these shortening autumn days; but in richness of colour and abundance of flower it is far surpassed by the *Caryopteris mastacanthus*, a small plant of which having stood out the last winter is now covered with its sapphire-blue flowers—it is a plant too seldom seen. *R. Milne-Redhead, Clitheroe.*

MICE EATING GRAPES.—A fortnight ago we were much troubled by mice eating the Grapes. The destruction they made even in a night was deplorable, not only by nibbling the berries, but by dropping the chewed skins into the middle of the bunches, from which it was impossible to remove them, save by cutting the bunches and holding them under a tap of running water. As a preventive had to be promptly applied, we got sheets of glazed paper cut into squares of about 12 inches. These squares were cut midway from one side to the centre, and brought carefully over the top of the bunches, the stem of the bunch passing along the cut. The two sides of this cut portion were passed one over the other and affixed with a pin, forming a funnel-shaped cowl, somewhat similar to an ordinary lampshade, with the bunch suspended inside, and resting only on two or three of the uppermost berries. Where a bunch did not hang clear of foliage and wires, the shoot was cut partly through and bent down, being secured from breaking off by a sling. So far this plan has been quite effectual; the only berries attacked since have been some on one side of a bunch near a string stretched horizontally, along which the delinquents must have walked. *B. J.*

BORDER CARNATIONS.—The present time is admitted to be the best for planting border Carnations. Having had a poor gravelly soil, I found the culture of Carnations to be most difficult, until I changed both soil and stock. Since doing this, Carnations have given me no trouble. Previous to planting, the beds are well dug, and a good dressing of farmyard manure is incorporated with the soil. A surfacing is always given of burnt clay and wood-ashes. The beds are made firm by treading, raked over, and the plants are planted with as good balls as can be procured, 15 inches apart. If the weather is dry, the plants are well watered with a rose-can to settle the soil. After severe frost they should be looked over, and any that are loose must be gently but firmly pressed into position. The strongest plants should be supported by a small stake, to prevent the wind from blowing them about. The best stakes I have found are made of galvanised wire cut in 3 feet lengths; they look smart, and are nearly the same shade of colour as the Carnation foliage. All Carnations are greatly benefited by disbudding, some good growers even thin the grass, and by doing so the remaining grass becomes stronger, and better layers are secured. The idea is sound and well worthy of practice. Heavy rains when the plants are in flower cause destruction not only to the expanded flowers, but to the bursting pods. Where protection can be given from sun and rain, the flowers are much cleaner, and present a brighter appearance when cut. Raisers should not lose sight of the value of the clove scent in Carnations when selecting new varieties of varied colours. Seedling Carnations are very useful; although there may be a percentage of singles, the bulk of them will be of much value for decorative purposes. *W. Angus, Aberdeen.*

GLOBE-SHAPED BEET.—Recently, at Chiswick and the Drill Hall, an Award of Merit was given to a capital stock of a deep, round-rooted, highly-coloured Beet, sent for trial to the former place, I think, by Messrs. Watkins & Simpson. Only a few days since the opportunity offered for me to pull and have cooked roots of a stock of exactly similar character obtained from Messrs. Sutton & Sons, under the name of Sutton's Globe, and grown in a Beet trial I have at Richmond. It is a first-class strain, the

roots deep, solid, rich in colour, and fine in flesh. During such a dry season as the past has been these round-rooted forms have done better than have the tapering-rooted ones, on a very dry porous soil. If it were the rule to sow seed of the former early in the spring, to give roots to last into October, and seed of the tap-rooted Beets at the end of May, very much more satisfactory results would often be obtained. *D.*

THE CHRYSANTHEMUM-RUST.—It is certainly odd that seeing, according to Mr. G. Massee's description of its life and operations, the spores of this fungus needs moisture on the leaves to excite germination, that the outbreak recently mentioned amongst Chrysanthemums should have occurred during one of the driest summers on record. The obvious inference is that dry air and hot aridity is more helpful to the fungus than is a moist season, yet we see in the somewhat analogous Potato-fungus that the heat and drought of the past summer have done so much to check its development, that breadths of Potato plants may be seen even in October green and vigorous, truly a *lusus naturæ*, in these days of *Peronospora* operations. We do know how important a part moisture plays in spore germination on the Potato leafage, and this season we see ample evidence, were it needed, of the counteracting effects of drought. Naturally, we might have expected that Chrysanthemum leafage in relation to an attack of an allied fungus would have equally benefited from dryness of atmosphere. But it may be, in the case of these plants, that their foliage has frequently been artificially moistened by moderate syringing, which sufficed to damp the leafage, and thus created favourable conditions for fungoid growth. On the other hand, frequent rains being more continuous, would perhaps have washed the rust-spores from off the leathery leaves of the Chrysanthemum plants, and thus rendered them harmless. The leafage of the Potato-plant is notoriously soft and hirsute, hence presents, when moisture prevails, much readier soil for fungoid germination. However, just now everybody interested wants to know of a preventative remedy, and that Mr. Massee has furnished. *A. D.* [It being customary to syringe Chrysanthemum plants in pots once or oftener on bright days, they cannot be compared to the Potato crop in the advantages possible from dry weather. Syringing may be necessary, but it is one of the surest means of spreading the "rust" fungus. *ED.*]

CALCEOLARIA AMPLEXICAULIS.—This species of *Calceolaria* was introduced from Peru in the year 1845, and soon became a popular plant. About twenty years since, however, the great rage for carpet-bedding began to elbow out of fashion such tall-growing subjects. The true merits of this *Calceolaria* are, however, again becoming appreciated. Given proper cultivation, no kind of weather, wet or dry, seems to affect them adversely. The terminal corymbs of pale yellow blossoms are most profusely displayed, and tend to give colour as well as variety to the garden. In a mass this *Calceolaria* is effective, and also when associated with *Lavatera trimestris*. This plant, however, should not be planted sufficiently thickly to interfere with the growth of the *Calceolaria*, which should be the base of colouring. Catalogues generally describe the height of growth as reaching 2 feet. Under ordinary cultivation this is a low estimate. At Aldenham Park, I lately saw a circular bed filled with plants fully 4 feet high, and it was a mass of colour, surrounded with bright-coloured *Begonias* and *Pelargoniums*. Cuttings should be inserted thickly in boxes or in cold frames during September or early October. Keep them from frost, and put out the plants into more boxes or a cold frame in March. Pinch out the point of each shoot to induce a bushy habit. *E. Molyneux.*

TRADE NOTICE.

S. S. MARSHALL, LTD.

The directors of this company have now taken over and amalgamated the two businesses of nurserymen, fruit-growers and market-gardeners, carried on by Mr. S. S. Marshall, and Messrs. Marshall & Pertwee, of Barnham, Sussex. Messrs. W. W. Pertwee and J. P. Goodacre will act as managing directors, and Mr. S. S. Marshall will remain as general managing director of the company.

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 11.—A meeting of the committees of this Society was held in the Drill Hall, James Street, Westminster, on Tuesday last. There was a fine display of exhibits, and this notwithstanding that the October exhibition of the National Chrysanthemum Society was held simultaneously at the Aquarium. In the afternoon, an interesting lecture was delivered by Professor HENSLOW upon some of the plants exhibited.

AWARDS.

The Orchid Committee recommended a First-class Certificate to *Lælio-Cattleya Dominiana* var. *Langleyensis* from Messrs. JAS. VEITCH & SONS; Awards of Merit to *Dendrobium Huttoni sanguinolentum*, also from Messrs. JAS. VEITCH & SONS; *Lælio-Cattleya Henry Greenwood*, from Messrs. B. S. WILLIAMS & SON, Upper Holloway; and *Sopbro-Cattleya* × *Cleopatra*, from Messrs. CHARLESWORTH & CO., Bradford. There was a very fine exhibit of plants in flower of *Dendrobium formosum giganteum* from Mr. J. Hudson, gr. to Messrs. DE ROTHSCHILD, Gunnersbury House, Acton.

By the Floral Committee, two First-class Certificates were awarded—one to a Palm, *Linospadix Petrickiana*, from Messrs. F. SANDER & CO., and the other to *Alocasia spectabilis*, from Messrs. JAS. VEITCH & SONS. Awards of Merit were recommended to *Chrysanthemum Jules Mary*, from Mr. WELLS; to *Cactus Dahlia Ebony*, from Mr. MORTIMER; and to *Cordylone Eckhautii*, from Messrs. JAS. VEITCH & SONS.

By the Fruit Committee, Awards of Merit were recommended to *Melon Gunton Scarlet*, from Mr. Allan, gr. to Lord SUFFIELD; to *Melon Wythes' Scarlet*, from Mr. Wythes, gr. to Earl PERCY; to a large red-fruited Plum, named *Primate*, from Messrs. T. RIVERS & SON; to *Apple Invincible*, from Mr. W. BODALY, Towcester; and to *Apple Mrs. Jno. Seden*, from Messrs. JAS. VEITCH & SONS.

Floral Committee.

Present: W. Marshall, Esq., chairman; and Messrs. Jno. Fraser, Chas. D. Drury, H. B. May, J. H. Fitt, Wm. Howe, Jno. Jennings, Jas. Hudson, J. F. McLeod, C. J. Salter, J. D. Pawle, Chas. E. Pearson, W. Bain, Geo. Gordon, Jas. Walker, J. T. Bennett-Poß, Henry Cannell, Ed. Mawley, Chas. Blick, Harry Turner, Geo. Paul, D. B. Crane, E. T. Cook, and Chas. Jeffries.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, had an uncommonly pretty exhibit that covered half of the length of one of the central tables. The exhibit was really one of exquisitely cultivated plants of the lovely winter-flowering *Begonia Gloire de Lorraine* in 5-inch pots. These were disposed on pedestals, and in various positions, and excellent examples of choice varieties of Ferns. The effect was very beautiful (Silver-gilt Flora Medal).

Messrs. WM. PAUL & SON, Waltham Cross Nurseries, Herts, had an exhibit of Roses in pots of Tea and Noisette varieties, and bunches of bloom from the open of many varieties. One of the newest of the plants in pots was *Tea Rose Queen Olga of Greece*, a warm salmon-pink bloom, very pretty in bud; *Empress Alexandra of Russia*, and other new ones were also remarked. A fine plant of *Yucca gloriosa variegata* in a pot from Messrs. Paul was shown with a flower-spike in course of development (Silver Flora Medal).

From THOS. S. WARE, Ltd., Hale Farm Nurseries, near Tottenham, came an exhibit of single-flowered Dahlias, perennial Asters, and a few varieties of Nerine.

A First-class Certificate was awarded Messrs. F. SANDER & CO., St. Albans, for *Linospadix Petrickiana*, a neat-habited and ornamental species of this genus of Palm with pinnate leaves.

Mr. W. WELLS, Earlswood Nurseries, Redhill, showed several varieties of *Chrysanthemum*, and an Award of Merit was recommended to the variety *Jules Mary*, a purple-crimson Japanese flower, of moderate size, and probably useful as an early-flowering decorative variety.

A First class Certificate was recommended to *Alocasia spectabilis*, shown by Messrs. JAS. VEITCH & SONS. The leaves are broad ovate hastate, metallic-green, the mid-rib and large veins very pale green, whilst the interspaces are beautifully veined with white.

A green-leaved *Cordylone* (*Dracæna*), named *Eckhautii*, was recommended an Award of Merit. It has narrow foliage (not more than an inch wide), much recurved, and will make a good decorative plant.

From Mr. R. GÜLZOW, Melbourne Nurseries, Bexley Heath, Kent, came fourteen plants of *Anthurium crystallinum* illustre. The plants were young, but being much variegated and mottled with creamy yellow, they are exceedingly decorative. It is said that the plants grow as large and vigorously as *A. crystallinum*, and it will undoubtedly be a much-coveted plant.

Messrs. PAUL & SON, Cheshunt, had a group of Rose-trees in pots, showing many varieties of Teas, &c., useful for winter-blooming. All of them were represented by finely-bloomed plants. There was also a collection of cut Roses in numerous varieties.

Messrs. PAUL & SON also showed sprays of *Ligustrum maculatum variegatum*, *L. japonicum aureum*, *Aucuba japonica rotundifolia*, a bold, but green-leaved variety, and of *Caryopteris Mastacanthus*, with its pretty, pale-blue flowers (Silver Flora Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, had some capital sprays of the new *Physalis Francheti*. The growing points of the shoots were yet quite green, and below upon each were eight or nine very brilliantly coloured calyces. Some sprays of an excellent strain of *Pentstemon*s, with large and beautifully-coloured flowers, were also from Messrs. JAS. VEITCH & SONS (Silver Banksian Medal).

A grand exhibit of Perennial Asters, or Michaelmas Daisies, was shown by Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea. These were plants lifted from the open ground and placed in pots, and accordingly the various habits of the varieties were illustrated, as well as the flowers of each. There were some excellent varieties of *A. Nova Angliæ*, one of them, *pulchellus*, being a large purple flower of grand effect. The varieties of the pretty *A. paniculatus*, too, were of great effect in the group; although the flowers are small, they are produced in great numbers. Then there were some of the dwarfier varieties that faced the group, many of these being bushy plants of a foot high, 2 feet, and so on. But we cannot enumerate a title of the desirable varieties. The Aster is an indispensable plant, and one is forcibly reminded of this fact every autumn (Silver Flora Medal).

A fine group of plants in flower of hybrid greenhouse *Rhododendrons* was also shown by Messrs. JAS. VEITCH & SONS (Silver Banksian Medal).

A beautiful exhibit of *Nepenthes* was made by Mr. Geo. Wythes, gr. to Earl PERCY, Syon House, Brentford. One of the most difficult plants to cultivate successfully, the *Nepenthes* are seldom exhibited from a private establishment, and such a large collection of healthy-looking plants, many of which carried large and well-coloured "pitchers," as was shown by Mr. Wythes is worthy all praise. We noted amongst the varieties shown *N. sanguinea*, *Amesiana*, *Mastersiana*, *Wrigleyana*, *Morganke*, *Wittei*, *Hookeriana*, *formosa*, *hirsuta*, &c., also a few *Sarracénias* (Silver-gilt Flora Medal).

Mr. GEO. PRINCE, of the Oxford Nurseries, had a few beautiful Roses, more particularly of the varieties *Marie Van Houtte* and *Maman Cochet*. By sprays, natural foliage, &c., a very fine effect was produced.

Sir T. LAWRENCE, Bt., Burford, Dorking (gr., Mr. Bain), showed sprays of some varieties of *Lobelia* and *Pentstemon*s. *Lobelia Queen Victoria*, *Crimson Gem*, *British Maid* (pink), *Caroline Gem*, and *Prince Arthur*, were all pretty; and the large flowered *Pentstemon*s also.

From Mr. S. MORTIMER, Rowledge Nurseries, Farnham, was shown a new dark coloured *Cactus Dahlia*, named *Ebony*. It is of large size and correct form, and is said to be deeper in colour than either *Matchless* or *Night* (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), De B. Crawshaw, J. Gurney Fowler, H. Pallantine, H. M. Pollet, E. Hill, J. Gabriel, F. J. Thorne, W. Cobb, W. H. Young, W. H. White, H. Little, T. W. Bond, S. Courtauld, T. B. Hayward, and H. J. Chapman.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), showed an interesting group of rare species and hybrids, among which were *Dendrobium Phalenopsis hololeucum*, a snow-white variety, the plant shown being a second introduction of the noble albino, the one now shown having probably rounder flowers with broader petals than the one previously certificated; *Lælia præstans purpurea* (grown at Burford since 1882), a richly-coloured form of the true type, displaying the peculiar features of lip which distinguishes it from *L. primula*, a pretty, nearly white form of which was also shown; *Cattleya* × *St. Benoit* (*Schrodæ* × *Acklandiæ*), a charming hybrid with light rose-purple sepals and petals, and magenta-purple lip, much resembling a variety previously shown as "*Duke of York*;" *Miltozia* × *Lamarcheana*; a fine specimen of *Cypripedium* × *Lawrebel* with ten flowers; *C. × regale* with several blooms; two fine spikes cut from a specimen with nine flowers of *Lælio-Cattleya* × *Exoniensis*; a portion of a plant of the original sent out by Messrs. VEITCH some thirty years ago, and which has been ever since in Sir Trevor Lawrence's collection; a fine pan of the scarlet *Habenaria militaris*, and the first plant exhibited of the elegant *Epidendrum porphyreum*, with reed-like stems, clad with dark green purple tinted leaves, and bearing at the top drooping panicles of orange-coloured flowers, with white lip, changing to yellow (Botanical Certificate).

Messrs. DE ROTHSCHILD, Gunnersbury House, Acton (gr., Mr. J. Hudson), staged a very effective and remarkable group of marvellously well-grown *Dendrobium formosum giganteum*, the thirty-four specimens bearing between them nearly 700 of their grand snow-white flowers, with orange centres. Staged with them were some good *Odontoglossum grande* and *Vanda Kimballiana*, and a Silver-gilt Flora Medal was awarded in recognition of the floral beauty of the group, and of Mr. Hudson's skill in developing it so well.

Messrs. J. VEITCH & SONS, Chelsea, staged a group of fine hybrid Orchids, in which the centre of interest was their reproduction of *Lælio-Cattleya* × *Dominiana* (*C. Dowiana* × *L. purpurata* ?), one of their earliest and best productions, and which was now called *L.-C. × Dominiana Langleyensis*, and deservedly awarded the only First-class Certificate given at the meeting. The large bold flowers had pale pink sepals and petals, the petals delicately veined with purple. The broad labellum was of a rich claret-purple, veined with yellow at the base, and with a narrow lavender-coloured margin. Another fine old favourite, now honoured with an Award of Merit, was *Dendrobium* × *rhodostoma* (*Huttoni* × *sanguinolentum*) which almost perpetually bears its French-white, waxy flowers tipped with claret colour; and very attractive

were specimens of *Lælio-Cattleya* × *callistoglossa* var. *ignescens*, and *L.-C. × Nysa*.

WALTER COBB, Esq., Dulcote, Tunbridge Wells (gr., Mr. J. Howes), sent a grand plant of a fine variety of *Vanda Sanderiana*, bearing five spikes, with an aggregate of fifty-one flowers and leads, and for which a Cultural Commendation was given. Also *Cypripedium Percival Cobb*, a dark-coloured hybrid, probably of *Cypripedium* × *Harrisianum* superbum.

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, were awarded a Bronze Medal for a group in which were *Cymbidium Traceyanum*, *Vanda cærulea*, *Lælio-Cattleya* × *Schilleriana*, *Cattleya superba splendens*, *Cycnoches chlorochilon*, *Odontoglossum cariniferum*, *O. grande*, *Dendrobium Lee-anum*, *D. Lowi*, *Cattleya Bowringiana*, *Oncidium ornithorhynchum album*, and *Cypripedium* × *Sallieri Heyanum*, &c.

Messrs. B. S. WILLIAMS & SON, Holloway, showed *Lælio-Cattleya* × *Henry Greenwood* (*L.-C. × Schilleriana* × *C. × Hardyana*), a plant from the same batch from which it was first exhibited at Ghent. The flowers were prettily formed, the sepals cream-coloured tinged with pink, the petals similarly coloured, but with fine rose-purple veining. Lip white at the base veined with rose, the middle portion chrome-yellow, and the front and tips of the recurved side lobes velvety-purple (Award of Merit). Messrs. Williams also showed the fine *Cypripedium Charlesworthi magnificum* and *Vanda concolor*.

Messrs. GEO. PAUL & SON, The Old Nurseries, Cheshunt, were awarded a Silver Banksian Medal for a group of very fine *Masdevallia tovarensis*, very densely set with their pure white flowers. The plants had been kept in a cold frame all the summer, shaded with wood-lath blinds. The pots were placed within an outer pot, the latter standing in water; at this season they are placed in a north house from which the lights are removed at night. Also with them were some good *Cypripedium Spicerianum*.

B. B. BAKER, Esq., Palace Road, Roupell Park, Streatham, showed a fine plant of *Odontoglossum grande*, with twenty-five flowers (Cultural Commendation).

W. A. BILNEY, Esq., Fir Grange, Weybridge (gr., Mr. Whitlock), showed two very finely flowered specimens of *Lælia pumila* (Cultural Commendation).

Messrs. CHARLESWORTH & CO., Heaton, Bradford, sent a three-flowered inflorescence of *Sopbro-Cattleya* × *Cleopatra* (*S. grandiflora* × *C. Leopoldi*). The flowers in size were similar to other *Sopbro-Cattleyas*, the sepals and petals of a peculiar red colour; the trilobed lip resembled the *Cattleya* parent in form, but on a small scale; yellow at the base; the tips of the side-lobes and the middle-lobe bright cherry-red (Award of Merit).

Messrs. F. SANDER & CO., St. Albans, showed an interesting group, in which were the singular *Angræcum ichneumoneum*, with pendent racemes of flowers, after the manner of *A. pellucidum* (Botanical Certificate and Cultural Commendation); the new *Dendrobium puniceum*, Rolfe; the pretty *Maxillaria striata*; a fine pan of *Stenoglottis longifolia*; the singular *Saccolabium curvifolium penangianum*; the fine *Miltozia vexillaria Leopoldi*, *Habenaria carnea*, *Lælia pumila*, *Cattleya Mantini inversa*, &c.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent the singular *Maxillaria longissima*, with long narrow yellow sepals and still narrower whitish petals, the lip being cream-white, delicately veined inside with dark rose (Botanical Certificate); and *Zygopetalum Gibizæ*, a variety of the *Warszewiczella* class, near to *Z. marginatum*.

Fruit Committee.

Present: Philip Crowley, Esq., chairman, and Messrs. J. Willard, Jos. Cheal, P. C. M. Veitch, A. F. Barron, W. Pope, T. J. Saltmarsh, J. Wright, Alex. Dean, G. T. Miles, Jas. H. Veitch, J. W. Bates, Geo. Wythes, W. G. Empson, J. Smith, F. Q. Lane, Geo. Reynolds, and Robt. Fife.

Messrs. GEO. BUNYARD & CO., Maidstone, exhibited a collection of 100 dishes of cooking Apples in remarkably good condition, it being one of the finest exhibits this firm has shown at the Drill Hall. Were it not so soon after the Crystal Palace show we might be tempted to particularise the varieties, but it will be sufficient to say that the 100 varieties were all good ones, and scarcely one of them was represented in other than first-class specimens (Silver-gilt Knightian Medal).

An Award of Merit was recommended to a large kitchen Apple, named *Invincible*, from Mr. D. BODALY, Green's Norton, Towcester, Northampton. The fruits are angular, red on one side, and green on the other, more or less covered with small spots. The eye is almost closed in the deep socket, and the stem is also deeply set.

A curious small-fruited Tomato, with the name of Walker's Green Gage, was shown by Mr. JNO. WHITE, Blythwood Gardens, Maidenhead. The fruits appear to ripen whilst green, eventually becoming coloured to a small degree.

A pretty little Apple was shown by Messrs. J. VEITCH & SON, Royal Exotic Nursery, Chelsea. It is from a cross between King of the Pippins Apple and the Transcendent Crab. The fruits are fairly intermediate, and it will be a very ornamental Crab, and probably a useful Apple also. It is known as Mrs. J. Seden.

A pretty fruit of *Melon*, Empson's Seedling, was shown by Mr. Empson, gr. to Mrs. WINGFIELD, Amptill House, Amptill.

Messrs. R. VEITCH & SON, Exeter, showed a very fine sample of Potato, Walter Raleigh (Vote of Thanks).

Some poorly-coloured Peaches were shown by C. J. SHEPHERD, Esq., Maidstone. They were described as seedlings from *Nectarine Victoria*, and were raised in 1894. This variety known as *Princess May* was passed over.

Messrs. T. RIVERS & SON, Sawbridgeworth, showed fruits of an excellent large-fruited red Plum, known as Primate, to which an Award of Merit was recommended.

A twin-fruit of Melon Frogmore Scarlet, which weighed 7 lb. 10 oz., was shown by an exhibitor whose name did not appear. We have already figured a twin Cucumber in these columns, and the Melon like it is the result of the union of two flowers at a very early stage of growth.

A collection of thirty-six dishes of Pears from M. R. SMITH Esq., The Warren, Hayes, Kent (gr., Mr. C. Blick), was very commendable. Bearing in mind the fact that the present season Pear crop has been a very indifferent one, the samples shown were first class. A few of the varieties, such as Doyenné Boussoch, Madame Treyve, Beurré Hardy, Souvenir du Congrès, were in a ripe condition (Silver-gilt Knightian Medal).

Another collection of Pears and of Apples was shown by Mr. A. H. Rickwood, gr. to Dowager Lady FREAK, Fulwell Park, Twickenham. There were nearly thirty dishes of Pears, and about forty of Apples (Silver Knightian Medal).

Mr. Allan, gr. to Lord SUFFIELD, Gunton Park, Norwich, showed half-a-dozen fruits of a new Melon, named Gunton Scarlet, a scarlet-fleshed variety of moderate size and good flavour. The exterior is yellow, sparsely but prominently netted (Award of Merit).

Several other seedling Melons were exhibited, including one from Mr. Geo. Wythes, gr. to Earl PERCY, Syon House, Brentford. It is a scarlet-fleshed fruit, with yellow exterior, and the flavour is good (Award of Merit).

A collection of Potato-tubers, in twenty six varieties, from Mr. R. W. GREEN, Wisbech, served to show how cleanly the tubers lift this season. The crop generally has been exceptionally free from disease, and the tubers should keep well. Some of the best varieties were represented (Silver Banksian Medal).

From Messrs. H. CANNELL & SONS, Swanley, Kent, came an exhibit of fine Onions of large size and good weight. Amongst the varieties were Improved Wroxton, Ringleader, Masterpiece, Reading Improved, Cannell's Selected White, Spanish, Cranston's Excelsior, Rousham Park Hero, Ailsa Craig, Anglo-Spanish, The Lord Keeper, Cocoa-nut, Sandy Prize, Cannell's Al; also Garlic, &c. The types were good, and well selected. There were twenty-six varieties (Silver Knightian Medal).

SCOTTISH HORTICULTURAL.

OCTOBER 4.—An ordinary monthly meeting of the Scottish Horticultural Association was held on the above date.

A paper on "The Influence of the Press on Horticulture," by Mr. A. S. GALT, was read by Mr. R. LAIRD. Before the advent of the Press to its present place of honour and of power, the theory and practice of horticulture consisted largely in the making and keeping of secrets; the eager questionings of youth were met with the answer, "Ah! my laddie, that's a secret." With the higher light and safer leading of our horticultural and general literature, the idols of secrecy have been smashed, and the practical man vies with the Press in clearly revealing the secrets of Nature and art as revealed in horticulture. Nor is there any antagonism between the highest and best literature and the most solid practice. Rightly understood these are not two, but one. The Press voices clearly and gives fuller expression to our best practice, and pictures more vividly our great object-lesson of beauty and utility in field and garden. Nor can any passive policy of ignoring the Press, nor any conspiracy of silence, arrest the progress of our horticultural literature.

After a few remarks on the scope and object of the Press, Mr. GALT proceeded to divide the Press into two—the lay or general, and the special or horticultural. Horticulture is essentially the industry by which mankind is fed and clothed. Horticulture is also an important science, claiming relation to other sciences, and has thus close relation to mind as well as matter. And yet, as a rule, the general Press has little to say about horticulture, and when it does speak, not seldom makes mistakes, more amusing than instructive, through probably being buttonholed by some crank.

It may be convenient to divide the horticultural Press under the three heads of—The periodical Press, mostly weekly; books dealing with special subjects, as trade, literature, nurserymen's catalogues, pamphlets, &c. These are educational agencies among gardeners of the highest potency and value. They keep them up to date in their information.

No trade or profession is better served with manuals than horticulture, encyclopedias abound, and some of these are now and again being pulled up to date through new editions. Nicholson's Dictionary of Gardening, The Treasury of Botany, Thompson's Gardeners' Assistant, are merely samples of useful books that abound, and that have proved companions, friends, mentors, to thousands of gardeners. Special books, manuals, crowd the highways and byeways of horticulture on fruit, vegetable, and flower culture, Ferns, Roses, herbaceous plants, hardy and exotic plants. Principles are being expounded as well as facts circulated through the Press. Unless this is done, the gardener becomes the mere slovenly imitator of his predecessors. Subsequently, the Press quickens dull brains, fosters dullards into students, and presents each with a set of keys, that virtually open most of the closed doors he meets with in his everyday life, enabling him to find that what he reads bears directly upon the trivial round, the common task of his daily gardening.

The highly educational and other advantages of our highly improved trade literature must be obvious to all. The descriptions of these are true to fact, the illustrations *fac*

similes of Nature, and the cultural instructions the best available. Contrasted with some of their survivors of the olden times, we see how fast and how far we have travelled in higher and better directions.

The duty of gardeners towards the Press.—Make your wants known through it by advertising and describing them. Perhaps this is best done in the words of an American journalist to his readers: "Let us know what you are doing."

The effect of the Press on the individual appears when we remember that nothing develops the thoughtful man like reading; neither is it true that only fools engage in Press controversies; discussions often flash out new light, and all who take part in discussion, may, and often do, come out gainers. To be sure of our facts is the first qualification for Press-work. The influence of the Press on gardening as a profession has raised its quality, and done a good deal towards raising its market value in higher wage, &c. The battle is not yet over because it is not yet won.

Partly through the educational standard of England being raised up to, or beyond the level of Scotland, Scotchman and Scotland have lost the monopoly of first-class situations in both countries. We must take what comfort we can from Mr. GALT's explanation, that the Northern has not fallen away, but the Southern has gone up.

Mr. GALT concluded his interesting paper with a long paragraph on Press advertisements, and a hearty commendation of the Gardeners' Charities.

The lecture gave rise to a very animated discussion, in which several speakers condemned the Press as worthless, while others spoke of its services to horticulture in the highest terms.

THE EXHIBITS INCLUDED.—

a fine collection of small flowers. Early Chrysanthemums from Messrs. THOMAS METHVEN & SONS, Mr. CHAPLIN, St. Leonard's Park, and Messrs. R. B. LAIRD & SONS. Messrs. JAMES GRIEVE & SONS showed some fine strains of Pansies. The president (Mr. TODD), also showed a very choice vaseful of paper-white Pyrethrums, so much more chaste and elegant than white Asters at their best; likewise a vase of Gaillardias, and a bouquet of General Jacqueminot Roses, with the soft pinky Mrs. John Laing in the centre, and a few very dark Roses near it. Mr. ALEX. MACKENZIE, of the Warriston Nurseries, Edinburgh, gave some interesting notes on Mr. Methven's exhibit of early Chrysanthemums.

LOUGHBOROUGH AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

OCTOBER 7.—An exhibition of hardy fruits was held in the Corn Exchange on the above date. The display of fruits, numbering 400 dishes, was one of the best exhibitions of Apples and Pears ever got together in the neighbourhood.

There are no prizes offered, the object of the association being to compare notes of merit, and to correct the nomenclature of doubtful varieties of fruits, and at the same time to afford a good object-lesson to would-be planters by placing before them the best and most reliable varieties to select from. During the evening the exhibition was well attended. At 7 P.M. Mr. C. C. HURST, F.L.S., gave an instructive and scientific lecture upon the "Origin and Improvement of Our Hardy Garden Fruits." In the absence of the president of the association who, owing to business engagements, was unable to be present, the chair was taken by the Mayor, Ald. W. TIDD, J.P. D. R.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

OCTOBER 5.—The annual dinner was held on the above date, at the Holborn Restaurant, when Geo. Bunyard, Esq., V.M.H., presided.

There were about 110 persons present, many of whom being either honorary or benefit members. The chairman, in proposing the toast of the evening, stated that the increase of members continued in a most satisfactory manner, the present number of benefit members being 728. He urged all of those present to do their utmost to make the unique advantages which this Society offers to its members better known, and expressed a hope that ere another annual dinner was held that 1000 members would be on the roll. Mr. Bunyard explained in a concise manner the working of the Society, and the peculiar advantages that were within the reach of all who joined its ranks. The treasurer, Mr. HUDSON, who responded, thanked the chairman for his advocacy of the Society's claims, and expressed a hope that more young gardeners would join in the future than had done in the past. The Voluntary Convalescent Fund, established by the instigation and liberality of Mr. N. N. Sherwood, and the munificent donations of Mr. and Mrs. H. J. Veitch, renders it possible to assist young men who may after an illness need a change of air during convalescence. Several other gentlemen spoke in support of other toasts, and numerous donations were announced during the evening. For full particulars as regards this Society of, and for the benefit of gardeners, we refer enquirers to Mr. W. COLLINS (the secretary), 9, Martindale Road, Balham, S.W.

OCTOBER 10.—The truth of the remarks made by Mr. Bunyard at the annual dinner, was evident in a most emphatic manner on Monday last, when, at the monthly meeting, the secretary announced that one of the oldest members of the Society, one who took an active part in its formation, and since then on its committee, had reached the

age of seventy years, having during the thirty-three years of its existence made no claim for sick pay. The balance standing to the credit of this member was about £76, which sum, or any part of it, he can now draw as he may need it. As he was in failing health, and had strictly complied with all the requirements of the Society, by its rules he was voted the sum of 8s. per week, which sum amounts to £20 8s. per year, or a few shillings more than the yearly pension of the Gardeners' Royal Benevolent Society to its male pensioners. This fact illustrates in a striking way the advantages which accrue to aged members. This case is one which could not possibly occur in the Society until it had been in existence twenty-five years, as the age limit of admittance is forty-five. It is the first instance in which this distinct benefit has been applied for and granted, but in the future such claims no doubt will be more frequent, and each will be decided upon according to its particular merits.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

THE first meeting of the 1898—1899 session was held on Monday evening last in the club-room at the Old Abbey Restaurant, Mr. Turton presiding over a good attendance of members.

The subject for the evening was "A few Orchids that can be grown with other plants," by Mr. W. P. BOUND, of Bill Hill Gardens, Wokingham. The lecturer took up the various varieties suitable for different kinds of treatment, much stress being laid on the purchase of imported plants. A discussion ensued which turned chiefly on the topics—whether a drawing-room was a suitable place for Orchids, and if it is desirable to afford manure to Orchids. A hearty vote of thanks to Mr. Bound for his lecture, brought the meeting to a close.

A fully-flowered specimen of *Miltonia Clowesii* was shown by Mr. LAY, gr., to LEONARD SUTTON, Esq., Hillside, Reading.

NATIONAL CHRYSANTHEMUM.

OCTOBER 11, 12, 13.—The second show of the season was held in the Royal Aquarium on the above dates, and was an exceedingly satisfactory one. Many of the Chrysanthemum blooms shown were already very fine, and indicated a grand season of exhibition blooms later. The fine display of vegetables presented for Messrs. DEVERILL & Co.'s prizes also were exceedingly attractive, the Giant Onions fairly beating the record.

Plants in Competition.—Only two groups of Chrysanthemums arranged with foliage-plants were staged, the 1st prize being awarded to Mr. J. SPINK, Walthamstow. His arrangement was somewhat formal, and the plants were thin, but had fine blooms, which seemed to have condoned for defective grouping. Mr. W. HOWE, gr. to Sir HENRY TATE, Streatham Hill, was 2nd, having a taller and more highly-dressed group, also much better finished. His flowers, like his competitor's, were all Japanese, and very good. In both cases whites and yellows largely predominated. There were no entries in the class for bush plants.

Cut Blooms.—A very fine stand of twenty-four Japanese, placed 1st, came from Mr. J. BROOKS, gr. to W. J. NEWMAN, Esq., Totteridge, Herts. It included Madame Gustave Henry, Mutual Friend, and E. Tilsbury, whites; Sunstone, Oceana, John Seward, Phœbus, and Miss E. Curtis, yellows; Australia, W. Seward, Mrs. G. W. Palmer, and Elthorne Beauty, diverse. Mr. H. SHOESMITH, Woking, was 2nd, having in his stand good blooms of Madame Bruant, E. Molyneux, Pride of Madford, Bertha, F. C. Schwabe, Master W. Tricker, and International, good. Mr. R. JONES, gr. to C. A. SMITH RYLAND, Esq., Warwick was 3rd.

With twelve Japanese, Mr. J. FULFORD, gr. to D. LAMBERT, Esq., Cookham, Berks, was 1st. His stand included excellent flowers of Mr. J. Shrimpton, Oceana, Elthorne Beauty, bronze; Mons. Pankoucke, Mons. C. Biron, and others. Mr. JONES was 2nd, having fair blooms; and Mr. BROOKS was 3rd. The latter, however, was 1st, with six Japanese, having Miss E. Curtis, Mrs. H. Payne, Madame A. Molin, Elthorne Beauty, Oceana, and Madame Gustave Henry. Mr. F. POSTER, Havant, was 2nd; and Mr. B. NASH, gr. to F. A. WELLESLEY, Esq., Woking, 3rd.

With six blooms of one variety, Mr. R. GLADWELL, gr. to J. SMITH, Esq., South Norwood, was 1st, having very broad specimens of Madame G. Bruant. Mr. BROOKS was 2nd, with Madame Gustave Henry; and Mr. NASH followed with medium blooms of Edith Tabor.

Incurved blooms were restricted to one class only, for six flowers, Mr. R. BAILL, gr. to D. H. EVANS, Esq., Pangbourne, being 1st, with four blooms of M. R. Bahuant, and one each of D. B. Crane and Baron Hirsch. Mr. ROBINSON had Madame Ferlat and Duchess of Fife, with two other varieties.

The best twelve bunches of Pompons, a poor lot, came from Mr. S. J. COOK, gr. to A. N. STEPHENS, Esq., Hendon, a 2nd prize only being awarded.

Far better flowers came in the class for six bunches from Mr. T. TURK, gr. to J. BENEY, Esq., Highgate, having good Veuve Clicquot, Osiris, Vesuve, Nellie Rainford, Madame E. Dordan, and La Vierge. Miss R. DEBENHAM, St. Albans, was 2nd. In a further class for twelve bunches of Pompons, this lady was 2nd, no 1st being awarded.

In the amateur's class for twelve Japanese, Mr. W. C. CLARK, Hitchin, was 1st, with fair flowers, but little variety; Mr. H. LOVE, Sandown, Isle of Wight, was 2nd.

With six Japanese, Mr. W. AMES, South a ford, came 1st; and Mr. CLARK 2nd. There were one or two other classes in this section, but they do not call for comment.

Vases.—There were several very attractive pairs of these set up, the best coming from Mr. Mease, gr. to A. TATE, Esq., Downside, Leatherhead. The vases were rather too tall, but the flowers in them were very fine, and were admirably draped and dressed with handsome-coloured foliage and grasses.

With a single vase of Pompons, Mr. W. GREEN, Haroldswood, Essex, was 1st, with a charming bunch, pleasingly arranged.

The class for three dressed stands or epergnes filled a large table, and formed a most attractive feature. Very beautifully dressed were those from Mr. D. B. CRANE, Archway Road, Highgate, the flowers being moderate, and the dressing of Croton foliage, Sumach, Asparagus, &c., was singularly beautiful. Mr. W. GREEN, Haroldswood, was 2nd, with rather broad wire stands, not sufficiently dressed. Mr. J. R. CHARD, Stoke Newington, coming 3rd.

Floral decorations of a more extensive nature, arranged on tables, came from Mrs. NELLIE ERLBACH, with Mr. J. R. CHARD, and Mr. J. EMBERS, Walthamstow.

Miscellaneous.—Under this heading were many very fine exhibits, including a very large and superbly arranged group of Chrysanthemums and foliage plants, from Mr. H. J. JONES, of Hither Green Nursery, Lewisham; also one having a dense base of cut bunches of autumn-blooming varieties, from Mr. W. WELLS, Earlswood, the variety and colouring being remarkable and beautiful; with this was set numerous tall plants of Japanese varieties, amongst which was the new yellow Le Grand Dragon, that was very fine. Messrs. H. CANNELL & SONS, Swanley, had a charming group of Cannas interspersed with cut blooms of a Polygonium, and a table of cut Chrysanthemum blooms also set in the same inflorescence.

MESSRS. H. DEVERILL & Co., Banbury, had a large group of hardy herbaceous flowers, early blooming Chrysanthemums, and other things. Mr. NORMAN DAVIS, Framfield Nurseries, Sussex, had in the gallery where few visitors went, a remarkably attractive collection of perennial Asters in fine bunches, one of the best groups ever set up. A very attractive one only a little less imposing, came from Mr. E. Beckett, gr. to Lord ALDENHAM, Elstree. There was also a huge arrangement in cones or pyramids of Cactus, Decorative and Pompon Dahlias in wonderful variety from Mr. T. S. WARE, Ltd., Tottenham; and a very fine display in the usual way of Show and Cactus Dahlias from Mr. S. MORTIMER, Farnham, Surrey, showing that frosts have spared these tender flowers in some districts.

Mr. GODFREY, Exmouth, set up a fine lot of Japanese Chrysanthemum blooms, and an even more attractive collection of winter-blooming Carnations in low vases dressed with Fern, that was greatly admired. Messrs. J. LAING & SONS, Forest Hill, had a splendid collection of Apples and Pears, with some small fruits. The table was handsomely dressed with plants, flowers, and foliage.

Messrs. W. CUTHBUSH & SONS, Highgate, sent very fine Apples and Pears, in splendid form, and dressed their table admirably with plants and foliage, but somewhat incongruously included several small heaps of large Onions. A grand table of hardy fruit came from Mr. H. BERWICK, Sidmouth, that was also handsomely dressed with flowers and foliage; and there was also an excellent show of fruit from Messrs. SPOONER & SONS, Hounslow.

Messrs. R. CUTHBERT & Co., Southgate, showed plants of their pretty, soft, rose-shaded, dwarf Chrysanthemum, Miss Wingfield; and Mr. G. R. BOX, Croydon, exhibited numerous Begonia flowers.

MESSRS. H. DEVERILL & Co.'s VEGETABLE PRIZES.

The class for a collection of eight kinds of vegetables brought very fine produce, the 1st place being taken by Mr. BECKETT, whose lot comprised grand Cauliflowers, Leeks, Onions, Beets, Tomatos, Carrots, Satisfaction Potatos, and fine red Celery; Mr. R. Lye, gr. to Mrs. KINGSMILL, Sydmon-ton Court, Newbury, was 2nd with very similar kinds, of great excellence; and Mr. W. Pope, gr. to the Earl of CAR-NARVON, Highclere Castle, was a wonderfully close 3rd; Mr. T. Wilkins, gr. to Lady THEODORA GUEST, Henstridge, being 4th with twelve Ailsa Crag, or Cocoa-nut Onions.

Mr. W. Fyfe, gr. to Lord WANTAGE, Lockinge Park, was 1st with huge samples, that whilst of fine form, wanted rather more finish; Mr. J. MASTERSON, Shipston-on-Stour, was 2nd with very large bulbs also, but rather rough in appearance. Mr. T. WILKINS, who had the best finished large bulbs, coming 3rd. The decisions seem, however, to be determined by the scales and not by judgment. With six bulbs of the same varieties Mr. FYFE was again 1st. In both classes only Ailsa Craig was staged.

In the class for twelve bulbs of other varieties, Mr. FYFE was again 1st, with huge Lord Keeper; Mr. WILKINS coming 2nd, with Anglo-Spanish. The bulbs of these were exactly alike, differing only in name. Flat bulbs of Ailsa Craig exactly resemble both. Mr. WILKINS was 1st, with twelve bulbs of the globular Wroxtan. Mr. D. Gibson, gr. to T. B. JOHNSON, Esq., Kingston Hill, had the best six Leeks.

Mr. BECKETT had the best twelve Beets, but had necks and tails too long; Mr. BOWERMAN, Hackwood Park, Basing-stoke, having prettier roots, was placed 2nd.

Mr. BECKETT was again 1st with Celery. Mr. BECKETT also had the best Parsnips, very handsome, clean roots, and the handsomest Tomatos.

The Chrysanthemum Rust.

Stirred by the numerous complaints of damage wrought by the fungus figured and described in our last issue, the executive of the National Chrysanthemum Society on a

a conference upon the subject. This was held in St. Stephen's Hall, at the Royal Aquarium, on Tuesday evening last, and proved to be a very popular event, there being, we should estimate, upwards of 200 persons present. Mr. T. W. Sander, Chairman of the General Committee, was chairman.

After a few introductory remarks from the chairman, a paper was read upon the practical aspect of this rather serious question, by Mr. P. WATERER.

In opening the subject, Mr. WATERER described the appearance of the pest upon the leaves, and exhibited a painting of an affected leaf. Curiously enough, Mr. Waterer's experience is that the fungus has not occurred upon leaves below the first "break." He first found the disease in his collection on September 10 last. The plant was at once isolated, and a healthy plant was placed on either side of it. Though the disease spread rapidly through the collection, it is a coincidence the plants placed near the one first attacked remained perfectly free from the disease. The weaker-habited varieties had fallen a prey to the rust, but the disease is less destructive to those having strong leathery foliage; whilst the Davis and Carnot types have altogether escaped. Since the plants have been housed, the pest has greatly decreased, due probably to the altered conditions under which the plants are cultivated. Mr. Waterer looked about his garden to see if the fungus was upon other species of plants, and as it is common to most plants of the Compositæ order it is not surprising that he found it upon the Hawkweed and various other species. Mr. Waterer was most interesting when he came to explain what success has attended his efforts to cure the disease, that is, kill the spores, &c., but his words offered little encouragement. He had tried sulphide of potassium, neat paraffin, and an insecticide obtained from a chemist, who declared that the same was capable of "killing the d—— at 100 yards." However, neither the one nor the other, according to Mr. Waterer, was sufficient to kill the spores of this fungus. Mr. Waterer suggested: 1, That it was possible spores of the fungus were present in the material used for potting the plants; 2, that the ground around the plants should be kept as clean as possible; 3, That the rubbish-heap be given a very wide berth. He was glad that the Society had shown its earnestness in this matter.

Next was delivered a lecture by Mr. GEO. MASSEE, of the Herbarium, Royal Gardens, Kew. This lecture fully explained the "rust" from the scientific point of view, but as there appeared in these columns last week an illustrated article by the same gentleman upon the subject, it will not be necessary to refer at much length to his remarks on the present occasion. Mr. Massee knew that he addressed an audience composed largely of Chrysanthemum growers, and he did not let slip the opportunity of telling them, that to a very large extent, he believed that they had themselves to blame for the epidemic character the disease had assumed. Overcrowding was the sin Mr. Massee charged the growers with. They would insist upon growing their plants huddled up one against another. They had progressed, said the lecturer, in many ways as gardeners, but they had neglected to acquire a general idea of the habits and life history of fungi, and accordingly they were ignorant of the simplest precautions against its spreading, and had none but the most superficial knowledge of its character.

Mr. Massee reiterated that when the rust appeared it was only the fruit of the fungus, the mycelium of which was in the tissues of the leaves, and could not be killed by spraying or other means. Spraying is useful and certain as a preventive, but as a cure of no value whatever. It was explained that this particular "rust" was called Puccinia Hieracii, because it was first discovered upon the Hieracium, or Hawkweed. The difference between and separate functions of the summer spores and resting spores was fully described last week. It may be repeated here, that unless the spores fall upon a leaf with a damp surface they fail to germinate, and hence the syringe becomes the most effective agent in spreading the disease. If the leaf be damp, the spore will germinate in a couple of hours. The disease is entirely absent from a plant when leafless, as it fails to enter the stem at all. The winter or resting spores cannot germinate until spring, but where plants in houses carry green leaves during the winter the summer process of reproduction may be continued. When the plants are not present, the house may be syringed with sulphate of iron in solution. This will not hurt Vines, nor most other plants when leafless.

A discussion which was remarkable for a variety of extraordinary statements, that provoked many signs of incredulity, was then commenced.

Mr. W. WELLS read a paper dealing at some length with the subject, and he was apparently unable to make up his mind to call the "rust" a fungus at all, probably in his desire to distinguish it from the fungus that attacks the variety Golden Wedding and other weak-habited ones. But Mr. Wells had something of importance to communicate, and after the declaration of Mr. Waterer it came as a relief to hear that at Earlswood the fungus had threatened the plants greatly, but a weak mixture of paraffin and water—one tablespoonful to two gallons of water—had been found to be all that was needed to keep the pest at bay, and to render the plants entirely safe from destruction. Mr. Wells declared that he had completely cured his plants by its use, and without damage to the foliage. The meeting breathed easier. Here was a large grower who could afford to speak of the "rust" with a fearlessness bordering upon contempt. But Mr. Wells, before sitting down, exclaimed that he had the disease, and every other grower had it too. Now, it is well known that Mr. H. J. Jones had publicly declared that the disease was not to be found upon his plants, consequently, upon Mr. Wells resuming his seat, Mr. Jones rose to say that 'he was obliged now to admit that the fungus was in t
By or t collection, that Mr. Wells had been the only gentl

man able to discover it there, and it was upon a plant purchased from Mr. Wells himself." After this little passage of arms Mr. Norman Davis suggested that the rain-water used for syringing and watering the plants, be regarded as a very probable means of distributing the pest, a suggestion that Mr. Massee afterwards described as a particularly likely one. Mr. Massee therefore proposed that a little fungicide be mixed with this water before it is used. Mr. Davis also advanced the theory that the Chrysanthemum had become so weakly through too frequent crossing and inter-crossing; that this fact explained the reason why a pest, hitherto unknown on the plant, should suddenly become so destructive. He thought that it first attacked the weaker-habited plants, and upon them the fungus became stronger, and able to attack other varieties.

Next came a suggestion from Mr. BEVAN, of Finchley Cemetery, that the disease had been imported in cuttings and plants from France, where it raged last year. This may be so, but as the fungus abounds upon otherspecies of plants in almost all gardens and on the roadsides, it matters little whether a portion of the fungus came from France or not.

Mr. H. CANNELL, of Swanley, was the next speaker, and he, like a few others, was disposed to take an optimistic view of the whole matter. The pest need be feared little. He believed that it would run its course, and afterwards Chrysanthemums would be cultivated just as formerly. They would soon understand all about it, just as they did now understand the Potato-disease. Drought evidently favoured the development of the Chrysanthemum-fungus, and there had been three hot seasons. If 1899 was an ordinary British summer, the disease would not be an epidemic. Mr. Cannell then startled a few of the company by declaring that, knowing exactly what conditions were necessary for the development of the Potato disease, he could tell to a day when it would attack the crop generally. He has done so, and acres upon acres have become infested during one single night.

Both the lecturers were called upon for a last word, and Mr. Massee took the opportunity to explain that it was more than probable that the disease had become epidemic, owing to its having found a well-fed, exceedingly satisfying host-plant.

Mr. Waterer, in referring to Mr. Cannell's statement respecting the Potato-fungus, said, that he himself could always foretell mildew, and when certain conditions of weather prevailed, he was wont to say to his gardeners, "Get the sulphur out; there will be mildew in three days." Rarely had he been wrong in such prophecy.

Votes of thanks to the lecturers, to the Royal Aquarium Company, and Chairman of the meeting, brought to close a very interesting and instructive Conference.

Obituary.

CHARLES SMITH.—There are many who will regret to hear of the death of Mr. Charles Smith, on the 4th inst., in his eightieth year. He was one of the few remaining "old-school" gardeners. Away back in the fifties he was one of the leading exhibitors at most of the London shows. During his long career there was scarcely a single branch of his profession in which he failed to excel, thoroughness and force of purpose contributing to this result. Years back he was a most successful cultivator of New Holland plants. The British flora he was well versed in, and pomology was one of his hobbies. As a landscape-gardener he has left his mark in many gardens that bear proof of his ability. He took a great delight in the education of the many men he had under him, and was always ready to help them. He was buried in Hawley churchyard, followed by many friends. The whole village showed its last respect to an old parishioner, who was ever willing with his helpful counsel and sympathy. Mr. Smith was twenty-one years gardener to Mr. Anderson, at The Grove, Norwood, and it was whilst there that he gained his reputation as an exhibitor. He afterwards laid out the gardens at Ossemsley Manor, near Christchurch. From there he laid out Harefield House Gardens, Romsey, and a garden at Sunningdale. He retired from his profession about sixteen years ago.

CONTINENTAL NOVELTIES.

MESSRS. PLATZ & SON of Erfurt offer:—

Myosotis alpestris, "Star of Love,"—compact in growth, deep in colour.

Matricaria eximia corymbosa, fl. pl., "Snowball," pure white flowers.

Marrow-fat Pea, "Nero," six feet high, very productive, pods dark violet.

Frame Cucumber, "Alabaster," very productive, well-shaped fruits, white in colour.

Messrs SLUIS & GROOT, of Eekhuizen, Holland, are sending out:—

Radish, "Triumph," roots globular, horizontal scarlet stripes on a white ground; especially suited for forcing.

Mr. FREDERICK ROEMER, Quedlinburg, Germany, is offering:—

Bidens atrosanguinea superba (*Dahlia Zimapani superba*), like a miniature Dahlia; height 1 foot, flowers $1\frac{1}{2}$ inch across, dark red, nearly black; petals loose, sometimes cut and curled.

Coleus macrophyllus nanus.—A dwarf variety, not exceeding 6 inches in height; leaves dark red, flaked with a paler shade.

Godetia Duke of York compacta.—Dwarf, stout, and regularly branching; flowers bright scarlet-carmine.

Godetia carminea aurea compacta.—Of similar habit, but the blooms are rosy-crimson, edged with bright pale yellow.

Helianthus cucumerifolius "Orion."—With twisted or fluted petals, similar to those of a Cactus Dahlia.

Tagetes patula, fl.-pl., *Sulphur Liliput*.—Dwarf Marigold, with bright and double flowers.

Trifolium suaveolens foliis aureis.—A sweet-scented Clover, with golden-yellow leaves, and small lilac-red flowers.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

How is polishing of all kinds of wood effected, without staining it? *N. C. L.*

NOTICES TO CORRESPONDENTS.

ABIES NOBILIS: *Inverness*. The gouty swellings are the work of a scale insect like that which is known as American blight. Burn the affected shoots; and if possible, spray with petroleum emulsion. See figure and description in *Gardeners' Chronicle*, July 22, 1882.

BOOKS: *X*. You may obtain *Die Bindekunst* from J. Olbertz, Erfurt, Germany.—*J. H. M.* *The Propagation and Improvement of Cultivated Plants*, by F. W. Burbidge (published by W. Blackwood & Sons), has much on the subject, but we do not know any separate book.

BOWLING-GREEN: *P. J. P.* and *Heath*. So far as we can tell from the small plants, it is *Prunella vulgaris*. Fork it out, and sow Clover or fine grasses now or in the spring. A dressing of nitrate of soda or sulphate of ammonia would be advisable, to encourage the growth of the grasses. The mossiness is a sign of wetness of the soil, which nothing but drainage will prevent. To rid the lawn of worms apply lime-water, and afterwards collect the worms.

CHRYSANTHEMUM-RUST: *A. E.* See our issue for last week, and also the present issue.

COLD GREENHOUSE: *Beginner*. 1, Let it be constructed with glazed sides and ends, unless it be used for growing small market plants, when the roof may rest upon the wall plate, but the ends should be glazed; 2, Being a span-roofed house light would be abundant in either case, and the inmates would grow of symmetrical form, with an occasional turn round; 3, Purchase home-made, 21 oz. glass, free from flaws and air-bubbles. We do not know what is meant by the trade terms, "Thirds and Fourths."

CUCUMBER-HOUSES FOR MARKET-WORK: *J. W. R.* Where the erection of two or more Cucumber-houses is contemplated, a great saving of bricks and labour will be effected by substituting 9-inch brick piers for the continuous division walls. This method of construction has the additional advantage of a more uniform degree of heat and moisture being maintained during the whole period of forcing. In the construction of a block of houses on this system, outside and end walls only will be necessary; the former consisting of $4\frac{1}{2}$ -inch work, with 9-inch piers built flush with the wall inside at intervals of about 7 feet, the end walls being 9-inch work. The piers for supporting the valley-gutter should have a space of $12\frac{1}{2}$ feet from centre to centre crosswise, and at the distance mentioned above longways. This will give a width of 12 feet inside each house. The brickwork should

be about $2\frac{1}{2}$ feet high from the floor-line or door-sill. Planks of pitch Pine, 11 inches wide and $1\frac{1}{2}$ inch to 2 inches thick, should be used for supporting the rafters when fixed in position on piers, wall-plates being secured on either side of these for fastening the rafters to, and at the same time forming the valley-gutter for conducting roof-water into rain-water tanks. If rafters 8 feet long are used, a capital roof-angle will be secured. Well-seasoned yellow deal should be employed, and the houses should run north and south. Twenty-one-ounce glass, 18 inches wide and about 20 inches long, should be used in roof, bedding this in good putty, and securing on the top with brass sprigs, six to two panes, which should be allowed a lap of half an inch. The advantage attached to placing houses in the ground-line, that is, with the roof starting from the ground-line, is a small saving of bricks and less exposure to external conditions, a sunken central pathway being necessary in this case. The disadvantage, and a serious one, too, consists in not being able to use such class of house profitably for late crops of Tomatos, to be planted after the Cucumber plants are exhausted.

CYCLAMEN: *R. M.* We cannot find the grubs. They are probably those of a weevil, which are very destructive. Trap them at night with slices of Potato or Carrot.

EARLY-FLOWERING GLADIOLUS: *Walter S.* As soon after the beginning of March as the weather will permit.

FERNS, SEAWEEDS: *X.* Mr. James Crombie, of Barrow, has a collection of dried specimens for disposal.

GARDENERS' LIBRARY: *R. McF.* See *Gardeners' Chronicle*, January 4, 1890, p. 14.

GRUB: *Kentish*. The larvæ of a moth. Encourage starlings, rooks, or sea-gulls. Another time, please write each query on a separate piece of paper.

HORTICULTURAL LECTURERS: *R. A.* We know of no other means than advertising.

INSECTS: *G. Donald*. Not *Tipula oleracea*, but the larva of *Agrostis exclamantis* (the "Heart and Dart Moth"), very destructive, feeds at night, and retires underground during the day-time. The name of the Celery-fly is *Tephritis* (*Trypeta*) *onopordinis*. *R. McL.*

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—*S. E. A.*, *Yorks*. 1, Peasgood's Nonsuch; 2, not known; 3, Warner's King; 4, Yorkshire Greening; 5, Tower of Glamis; 6, Golden Noble.—*General Berkeley*. 1, Mère de Ménage; 2, Worcester Pearmain.—*J. A.*, *Antrim*. 1, not known; 2, King of the Pippins; 3, Pear, Gloût Moreau.—*J. P.* 1, Hawthornden; 3, Beauty of Kent; 4, Cox's Orange Pippin; 5, Cox's Pomona; 6, Cox's Pomona.—*G. S.* 1, Queen Caroline; 2, Winter Nelis; 3, Doyenné Boussoch; 4, Thompson's; 5, New Hawthornden.—*Ferns*. 1, Braddick's Nonpareil; 2, not known; 3, Cox's Orange; 4, Braddick's Nonpareil; 5, Worcester Pearmain; 6, Beurre Rance.—*D. C.* 1, Stirling Castle; 2, New Hawthornden.—*J. B.* 1, not known, some local sort; 2, Golden Noble.—*X. Y.* 1, Cox's Orange Pippin; 2, Ditto; 3, Beauty of Kent; 4, Norfolk Beefing; 5, Winter Peach; 6, Ecklinville Seedling.—*A. Hope*. This Apple, named Dumpling, is evidently a local sort, somewhat resembling New Hawthornden.—*Heath & Son*. Pear, Beurre Hardy; Apple, not known, probably Old Nonsuch.—*T. W. Swinburne*. Apple, Beauty of Kent.—*S. D.* 1, Lord Derby; 2, St. Alban's Pippin.—*Cydonia*. 1, Reine du Canada; 2, Dumelow's Seedling; 3, Striped Beefing.—*J. T. T.* 1, New Hawthornden; 2, Gravenstein; 3, Washington; 5, not known; Pear, Josephine de Malines.—*G. W. P.* Apple, Waltham Abbey Seedling.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*E. G. H.* Not a *Clerodendron*, but *Euonymus latifolius*.—*E. M. W.* The flower sent is of *Lælio-Cattleya* \times *exoniensis*. There is some variation in it, and yours is one of the lighter-coloured forms.—*J. G. W.*, *Oban*. The

Orchid is *Oncidium flexuosum*; the climber an *Aristolochia*, but which species it is impossible to say without seeing a flower, which we failed to find. The packing was excellent. We wish our correspondents generally were as careful as you.—*J. S.* *Pinus insignis*.—*Kentish*. 1, *Cupressus* (*Retinospora*) *pisifera*; 2, *Thuja dolabrata variegata*; 3, *Thuja Lobbi* of gardens, true name being *T. plicata*; 4, *Osmanthus aquifolium*; 5, *Thuja dolabrata*; 6, *Pseudo-tsuga Douglasi*—the Douglas Fir.—*W. B.* 1, *Pinus Laricio*; 2, *Thuja orientalis* var.; 3, *Picea orientalis*; 4, *Cupressus Goveniana*; 5 and 6, next week.—*G. D.* 1, *Rochea falcata*; 2, *Begonia Fischeri*; 3, *Myrtus communis*; 4, *Rubia pseudacacia*; 5, *Sedum Ewersii*; 6, *Ruscus aculeatus*; 7, *Oenothera macrocarpa*.—*J. R.* 1, *Quercus Phellos*; 2, *Punica granatum*; 3, *Myrica Gale*; 4, *Gaultheria Shallon*; 5, *Bambusa Fortunei variegata*.—*J. C.* 1, *Gaura Linheimeri*; 2, *Achillea Ptarmica*.—*D. M. F.* *Helianthus multiflorus*, double flower.—*J. E. K.* *Cineraria maritima*.—*T. W. C.* 1, *Chrysanthemum serotinum*; 2, *Rudbeckia speciosa*; 3, *Helenium autumnale*; 4, *Stachys lanata*.—*J. P.* No numbers. *Cornus mas variegata*; *Magnolia tripetala*; *Phytolacca dioica*; *Stachys lanata*, downy.—*D. C.* *Physianthus albens*.—*W. L.* 1, *Polygonum*; 2, *Polygonum orientale*; 3, *Solidago Purshi*; 4, *Aster divaricatus* (?); 5, *Poterium canadense*; 6, *Geranium pratense* var.; 7, *Linaria purpurea*.—*J. S.* *Solanum dulcamara*.—*H.* The Lucombe Oak.—*D. F.* The varieties of *Aster* are so numerous that we are unable to assist you. You should apply to some trade-grower.—*R. R.* 1, *Gaultheria Shallon*; 2, *Ilex crenata*; 3, *Aster amellus*; 4, *Potentilla fruticosa*; 5, *Berberis Wallichiana*, so far as we can tell from a flowerless scrap; 6, one of the dwarf Spruces, perhaps *Picea Clanbrassiliana*. Why send such miserable specimens?—*J. M. G.* We cannot undertake to name varieties of *Roses*.

PEARS: *W. H. S.* To understand the peculiarity of your Pears, you must first call to mind that the edible portion of a Pear or an Apple is not really a fruit at all, but merely a swelling of the flower-stalk enclosing the core, which is the true fruit. In your case the flower-stalk or branch has started into growth again, but no true fruits or "core" has been formed. The condition is by no means uncommon, and you will find in our back volumes numerous illustrations of it.

PEAR CRACKING: *Kentish*. The cracks are due to the attacks of a fungus, *Fusicladium dendriticum*. It kills the skin so that it cannot expand as the tissue within grow, hence the cracking. Spraying with Bordeaux Mixture in spring will check the disease.

PELARGONIUM: *C. S.* Very pretty deep rose, with a white centre. The flowers are small, semi-double, and rather rough, but quite good enough to induce us to recommend you to persevere.

POTATOS: *J. V. & Sons*. The Potatos are attacked with a fungus (*Peronospora*), which has arrested the proper development of the tubers.

WATERPROOF PAPER: *J. G.*, *S. W. D.*, *H. M.*, &c.—Our correspondent who wrote upon this subject, may be found at Norwood Green, London, N. Presumably, it would be to the advantage of the manufacturers to advise the specialty.

COMMUNICATIONS RECEIVED.—*W. E. G.*—*C. R. D.*—*Prof. Crié* Rennes.—*Prof. Engler*, Berlin.—*E. C. D.*, Madras.—*Prof. Hansen*, Copenhagen.—*E. W. B.*—*J. J. W.*—*Rural World Co.*—*Beginner*, next week: what has the publisher to do with such questions?—*Ch. Schneider*.—*W. D.*—*J. B.* & *Sons*.—*W. D. L.*—*G. B.*—*C. W. T.*—*G. F.*—*R. D.*—*D. C.*—*E. S.*—*J. O'B.*—*E. C.*—*H. K.*—*R. Armstrong*.—*R. L. H.*—*G. F.*—*Sec. Wootton Gardeners' Mutual Improvement Soc.*—*H. C.*—*J. J. W.*—*T. R.*—*H. M. S.*—*R. I. J.*—*W. M.*, *Coombe*.—*W. Horne*.—*C. S.*, *Swaaley*.—*F. W.*—*W. E. G.*—*W. W.*, *Shirley*.—*W. W.*, *Kew*.—*C. T. D.*—*E. W. B.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*Prof. Crié*, Rennes.—*C. S.*, *Swanley*.—*W. W.*—*A. J.*—*A. B.*

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see p. xii.)



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 22, 1898.

ALPINE PLANTS.*

THE practical gardener and amateur rarely meet with so valuable a treatise upon any subject as is this book on the cultivation of alpine plants. The material, and the way in which it is put together, will cause it to rank as one of our first-class cultural guides. The author himself, who is and has been engaged with the cultivation of alpine plants for nearly twenty years [and whose rockery at Zurich is one of the best we have seen. Ed.], has in his long experience made no small amount of observations, and noted many facts concerning the treatment of these beautiful plants in our gardens. Many alpine plants are as obstinate in accommodating themselves to our cultivation as some Orchids are. In placing his conclusions and valuable hints before the public, Mr. Woeke renders good service to growers, as will be generally acknowledged on reading about various species that are well known as most difficult to keep in our gardens.

The book is devoted to true alpine plants only. Plants generally used for decorating rockeries, and not natives of alpine regions, have not been taken into consideration. The matter is not only pleasant reading for those employed in plant culture and who read German, but the chapters about the natural homes of these little gems, and the transplantation of them from those regions into our gardens, will certainly interest many of those who visit the Alps yearly.

The contents are arranged in five sections. The first is devoted to alpine plants in their natural state, including notes on the climatal condition, and the nature of the soil, besides physiognomical and biological matters; and the distribution of alpine plants over the world. After showing in these chapters which factors in Nature exercise the greatest influence over the prosperity of the plants, and which of them have particularly to be studied to ensure success in cultivation, the writer proceeds to the second part. This is the most important one to the cultivator, as it treats exclusively of alpine plants in gardens, and mentions the principal points essential to cultivation. Here we find great stress laid on shortening the period of growth, keeping the soil moist, admitting air, and regulating the amount of light necessary for the various plants.

The author then proceeds to divide the alpine plants into groups, according to the physical character of their natural surroundings, and regards the following

points as specially important:—I. Shortening the period of growth; II. A thorough moistening of the soil, particularly in spring time, and the maintenance of a moist atmosphere around the plants; III. Classification of the cultivated plants according to the physical conditions of their natural homes, into, 1, rock and boulder plants; 2, half-rock or half-humus plants; 3, humus plants. IV. Exposure to full light (erection of the rockery in the most open place at command); V. Protection against unbidden guests, and destruction of weeds; VI. Covering and protecting the plants in winter.

A good many alpine plants have, on account of their delicacy, rarity, and for the purpose of propagation, to be cultivated in pots, and here again the writer displays great capability as a cultivator. The chapter on this subject is even more agreeable reading than is the rest of the book, and most instructive. He explains the reasons of critical cultivation of some plants, as *Phyteuma comosum*, *Campanula Zoysii*, *C. Morettiana*, *C. Raineri*, *C. Elatine*, *C. excisa*, *C. elatinoidea*, *Plantago nivalis*, *Melandryum* (*Silene*) *Elisabethæ*, and *Androsace*.

After devoting six pages to the treatment of alpine plants out on rockeries, the author goes on to show the necessity and importance of propagation, and describes various modes valuable to every grower. In connection with this chapter a list is given of alpine plants that are well suited for propagation by cuttings. Short percentage notes of the number of cuttings grown, and of special treatment where such is necessary, are also appended. For instance:—

<i>Achillea Clusiana</i> , Tsch., grew ...	60 per cent.
(Requires careful treatment).	
<i>Alpine verna</i> (L.), Bartl., grew ...	50 per cent.
(Rot easily).	
<i>Androsace carnea</i> , L., grew ...	80 per cent.
(Remains a long time unrooted).	
<i>Androsace Lageri</i> , Huot, grew ...	80 per cent.
(Roots very slowly).	
<i>Arabis bryoides</i> , Boiss., grew ...	75 per cent.
(Careful watering necessary).	
<i>Artemisia Baumgarteni</i> , Bess., grew ...	70 per cent.
(Requires to be kept rather dry, or it rots easily).	
<i>Dryas octopetala</i> , L., grew ...	35 per cent.
(Grows best in spring-time). &c.	

We are then led on to the chapter on soils, and to another dealing with the enemies of alpine plants under cultivation. Of all creatures none seem to have annoyed this lover of plants more than the thrush. We then come to the third section of the book. In it we find the erection and planting of rockeries described in detail. The author, who himself carried out the erection of the "alpinum" in the Royal Botanic Garden, Berlin, evidently possesses the ability to advise others, who are about or intending to carry out such structures. Various illustrations in this part show well the *modus operandi*, and should help others to avoid mistakes, which are so very easily made in this work.

A chapter very interesting, even to those having a good knowledge of alpine plants, is that in the fourth section, devoted to the habits of alpine plants in our gardens. Their changeability of character when grown in the lowlands is well known. An unsuitable soil or position is usually the cause of alteration in their habit. The majority, however, are the smaller-growing kinds, short in growth, with small leaves arranged for the greatest part in rosettes; these are true rock plants, and do not show any change of character in their foliage at any time.

A list of the best alpine and sub-alpine plants for cultivation forms the principal part of the fifth section. It is a valuable list for the cultivator, as letters prefixed tell him whether the plant is a rock, humus, or half-humus plant; shade or sun-loving, moisture-needing, or preferring a dry situation. Each plant-name is authenticated by the name of its author, and the native country is also indicated. To alpine plants with erroneous names, and those easily mistaken for others, a few pages of elucidation are devoted. An omission, which will be felt by many readers, is the want of an index, which the author has not thought necessary to append. It will be an addition of great value to every gardener's book-shelf, especially to those who are able to read German. It is composed of 257 pages, well and clearly written. E. B. B.

KEW NOTES.

HIPPOPHAE RHAMNOIDES.—There is nothing, perhaps, among hardy trees and shrubs that produces so bright an effect during the last quarter of the year as bushes of the Sea-buckthorn well set with fruit. A good example of its beauty may be seen on the banks of the pond near the Palm-house at Kew, where there is a group of plants now thickly set with the brilliant orange-coloured berries. These berries are almost globose, about the size of small peas, and clustered close to the branches almost as thickly as they could be packed. Considering its great beauty and the length of time this is retained, it is surprising to see how little the Sea-buckthorn is planted. It will ultimately grow into a small tree, but can by means of an annual pruning be kept as a shrub. Even without the fruit it is handsome in its foliage, the long narrow leaves having a grey-green, metallic hue, and the plant itself being of free and graceful habit. As male and female flowers are borne on separate plants, it is necessary that both sexes should be planted in the same group. It is best to keep them in the nursery till the sex can be determined, so that as many fruiting plants as possible may be selected. If set out in groups, one male to half-a-dozen or so female plants is a sufficient proportion. The Sea-buckthorn is a native of the coasts of Britain and other European countries, and loves abundant moisture.

HAMAMELIS VIRGINICA.

Whilst it has no pretensions to great beauty of flower, this, the old Witch-hazel of North America, is always interesting at this season of the year. For more than a century and a half it has been in cultivation in this country, yet, curiously enough, it is still uncommon. In some respects it is quite a unique plant. It comes into bloom at a time when the few flowers to be seen on hardy shrubs are, almost all of them, merely belated survivals of an earlier season, and when it is itself carrying the ripened seed of the previous year's flowers. Old specimens in the United States may occasionally be met with over 25 feet high, but I have seen none in this country anything like so high. It is a slow-growing shrub, of quaint and crooked growth, and more inclined to grow in diameter than in height. Its hazel-like leaves often turn a clear yellow before they fall. The calyx is brown and the petals pale yellow, the latter thin, narrow and wavy. The plant commences to flower in September, and continues till the new year. Whilst the petals and stamens fall as soon as the flower to which they belong is fertilised, the calyx persists. The ovaries of the flowers, fertilised in autumn, do not commence to swell till spring, and during the winter the calyx-lobes close over and protect them. The species has a wide distribution in Eastern North America, stretching from Nova Scotia and New Brunswick to Florida and Texas. It was introduced by Peter Collinson in 1736. W. J. B.

LEONOTIS DUBIA.

This is a beautiful addition to our greenhouse shrubs. It has been attractively in flower in the Mexican-house at Kew since August, having formed a loose shrub 8 feet high, and nearly as much through in about as many months. It differs from *L. leonurus*, the Lion's-tail Plant, in having their nettle-like leaves and axillary whorls of orange-brown velvety flowers, which form a cluster 3 inches through at intervals of about 1 foot on the upper part of the quadrangular stems, some of the clusters containing about a hundred flowers. There is something both pleasing and unusual in the colour and pose of the flowers, whilst the plant has grown like a veritable weed in the loamy soil of a border in a sunny greenhouse. We owe its introduction to Mr. John Mahon, of the Scientific Department of Zomba, British Central Africa, who sent seeds of it to Kew in January last, with the following note:—"A. leonotis, widely spread in British Central Africa at all elevations. It is interesting and really ornamental, the flowers being abundant, and of a deep orange colour."

* *Die Alpenpflanzen unter Gartenkultur der Tiefländer*, von Erich Woeke, Curator des Bot. Gartens, Zurich. (Verlag von Gustav Schmidt, Berlin, S.W., 46.)

ISOTOMA AXILLARIS.

Although a native of New South Wales, and recommended as a greenhouse plant, this Lobelia-like herb has grown and flowered freely in a sunny border in the open air at Kew, where it has been in flower for nearly three months, and is attractive still. I should say it would prove an excellent plant for the open border and flower-bed if raised from spring-sown seeds under glass, and planted out for the summer in the same way as Lobelias. Each plant has formed a tuft 9 inches high and 2 feet across; the numerous stems are clothed with bright-green pinnatifid leaves, from the axils of which spring erect slender one-flowered peduncles, the flowers consisting of a whitish slightly curved tube an inch long, and five radiating segments forming a star $1\frac{1}{2}$ inch across, and coloured purple-blue. It ripens seeds freely. It was first discovered by Allan Cunningham, who sent it to Kew. A figure of it was published in the *Botanical Magazine*, t. 5073 (1858), under the name of *I. senecioides* var. *sub-pinnatifida*.

NICOTIANA SYLVESTRIS.

This is a handsome Tobacco in the way of *N. Tabacum*, from which it differs chiefly in having its flowers elevated well above the foliage, and in their longer tube. It has been a conspicuous border-plant this year at Kew, where it has formed a mass nearly 6 feet high, with stems 2 inches in diameter, leaves from 18 to 24 inches long and 12 to 18 inches wide, smaller towards the top, bright green, covered with a soft pubescence. The flowers, which are pure white, consist of a long, slender, slightly inflated tube, and a limb an inch across; they are arranged in a terminal fascicle, and are semi-drooping. Unlike many of the Tobaccos with showy flowers, this has its flowers wide open all day, even in the brightest, hottest weather. It is a first-rate annual for the herbaceous border, and would be effective if planted in a mass on a lawn. Kew is indebted to Messrs. Dammann & Co., Naples, for seeds of it. A figure and description of it are given in their catalogue for 1898, where it is stated to be a native of the Argentine Republic.

HEMIZONIA PUNGENS.

This is a quick-growing, woody-shrub, with some resemblance to Gorse in its branched, straggling habit and fasciculate, spinous leaves. The upper branches and branchlets are terminated by yellow, composite flowers, with green disc, not unlike a small *Helianthus*. It has grown to a bush a yard wide and high, in a sunny position in the open air, where it was planted as a tiny seedling in June last. The bark of the main branches is almost milk-white; the leaves are bright-green, and as the flowers are both numerous and continuous, the plant makes an effective display all through the autumn. It appears to revel in a light soil and a sunny position. For its introduction Kew is indebted to Mr. Burt Davy, who sent seeds of it from California. It has ripened seeds freely at Kew, and judging from its behaviour here it is worth a place among annuals for a sunny border. Under favourable conditions it would probably prove perennial. W. W.

PLANT NOTES.

CRINUM GIGANTEUM.

This is a very useful *Crinum* of a size suitable for cultivation in small houses, it is also of comparatively easy culture. The leaves are lanceolate, 4 inches in width by 3 feet in length, somewhat flaccid in texture, inclining to glaucous-green in colour, with undulating margins. The flowers are sessile, six to eight in number, measure 6 inches across, with a light green, stem-like tube 6 inches long. The colour is white, with a light green band outside each segment; they are horizontally disposed in the form of an umbel on a scape 2 feet long. The flowers half close on bright days, expanding fully at night, and remain so on dull days. They are very fragrant, but last only for a few days. A temperature of 60° as a minimum suits the plant whilst growing; afford

slight shade, and keep them moderately damp when at rest. *C. giganteum* flowers best when the roots are somewhat confined, and a pot about twice the diameter of the bulb is large enough, as the bulbs need not be buried. It will be benefited by being placed outside during the summer, choosing a shady place for it. Thrips can be more easily kept in check outside. The flowering season extends over the greater portion of the year.

CYRTANTHUS SANGUINEUS

is now flowering with me. It usually produces four narrowly lanceolate leaves a foot long, and a solitary scapigerous flower resembling that of a *Vallota*. The flower measures $3\frac{1}{2}$ inches across and 3 inches in length, is cerise in colour, with six rich crimson lines inside the somewhat distended tube, and a white base. A temperature of 55° during growth, a dry resting period, and very careful watering, are its chief requirements. It may be propagated by offsets. A small quantity of coarse basic slag mixed with the soil suits this and many other bulbous plants from dry regions.

AMARYLLIS BELLADONNA VAR. KEWENSIS.

This grand bulbous plant is said to be a hybrid between *Amaryllis belladonna* and *Brunsvigia Josephinae*. It produces upwards of twenty flowers of a very deep rose colour, half of which are open at the same time. The long stout peduncles, pedicels, number and coloration of the flowers resemble the *Brunsvigia*, whilst the form of the flowers and leaves resemble those of *A. belladonna*. It ranks among the best flowering bulbs we have; four or five bulbs have recently flowered in front of the T range at Kew. In cold, retentive soils, *Amaryllis* should be planted at the base of a heated wall, placing a sheet of glass over the bulbs whilst resting, to throw off rains. A dry, warm resting period is essential to successful flowering. *Geo. B. Mallett*.

LINOSPADIX PETRICKIANA,
HORT., SANDER.

A VERY elegant, pinnately-leaved Palm was shown at the last meeting of the Royal Horticultural Society by Messrs. Sander & Co., St. Albans, under the above name. We have no means of verifying this appellation, and so we must provisionally adopt the name above given. *Linospadix* is a small genus of New Guinea Palms, comprising only two or three species. (See Beccari, *Malesia* i. (1877), p. 62.) Our illustration (fig. 87, p. 299), though of necessity inadequate, botanically suffices to show what a graceful addition to our stove Palms has been secured.

SOME DEVONSHIRE GARDENS.

(By our Special Commissioner.)

POWDERHAM CASTLE.—Among the ancient mansions of the county of Devon, this noble seat doubtless holds the premier position. Nearly six centuries have passed since the Courtenays first installed themselves by the Exe at Powderham, and there, in spite of many vicissitudes, they have remained.

Entering the Park at the Starcross gate, and proceeding up the drive towards the castle, the extent and variety of this grand estate are seen to be remarkable. Noble trees are met with in abundance, whilst nearer the edge of the carriage-way are grand pieces of *Berberis Darwini*, 10 to 12 feet high, covered with clusters of its purple berries. The climate here is most salubrious; a rich soil, resting on the red sandstone, has produced crops of a most satisfactory character, and are, as a consequence, unusually early. Mr. D. Powell kindly acted as guide on the occasion of my visit.

Looking across the river towards Exeter, and far beyond, the eye at one sweep takes in Topsham, with its historic landing-stages; Lympstone, with Nutwell Court, the home of Sir Francis Drake; Woodbury Castle, whose clump of Firs, enclosing the old Roman encampment, is a landmark for miles around; Exmouth, also, with its docks; and away beyond, Littleham, and the West Down Beacon of Budleigh

Salterton, the whole presenting a scene that can scarcely be matched.

Passing into the castle, I was shown a good-sized engraving, dated 1753, in which the castle is well represented. The chief interest, however, of this picture consists in the fact that at high tide the sea would appear to have come up almost to the very wall of the castle, since small pleasure-boats are depicted, as well as one of the larger ships of the period about to unload on the quay. This must have been on what is now part of the park.

That the deer in the park have been numerous and of large size we had evidence, since hat-stands, &c., were made entirely from the horns, many of which were unusually fine. The river Kenn passes through the grounds, and very sluggishly it moves along, attesting to the fact that the land at this particular spot is nearly on a level with the water in the estuary; from which, however, it is now kept out by a wide and solid embankment, built by the Great Western Railway, on which their trains are constantly passing to Torquay, Plymouth, and beyond.

The Castle is of historic interest, the north tower is generally admitted to have been built at least some 600 years ago; other portions, however, have been rebuilt once or twice, but each time on the earlier foundations.

Leaving the Castle, and passing round by the flower-garden, a scene of surpassing loveliness now arises before us. This portion, as another old print shows, was originally encompassed with stone walls, with a large square building at the far end, through which visitors must have passed. At different times the walls have been taken away, and the keep removed, following which this portion has been raised some 3 feet. Here the flower-garden is laid out, and in its best days was admitted to be one of the finest in the whole of the country. Many circular beds, with a double row of closely-trimmed Box-edging, were filled with choice bedding plants, and close-shaven Conifers at regular intervals add to the variety of the scene; this, with the grand surroundings and the river just beyond, is a rare sight. Round the castle were immense specimens of *Magnolia grandiflora*, 30 to 40 feet high! Oleanders, just passing out of flower; Myrtles, *Wisteria sinensis*, covering a large space; Jasmine, with a stem 9 inches round; *Chimonanthus fragrans*, very vigorous, deliciously fragrant when flowering in late autumn; whilst the same can be said now of *Lonicera fragrans*, which here is almost a continuous bloomer, scenting the air for a long distance around.

Passing into the park were groves of Beech of large size and perfect in shape; Oak, Ash, and Spanish Chestnuts were large, and of fine form. During the gale of March, 1897, when so much damage was done in South Devon, some 1500 trees were brought down on this estate, and even yet many of the giants are lying prostrate waiting removal. Beside the deciduous trees, there were fine examples of *Cupressus Lawsoniana*; and, as is often the case with this species, considerable variety was observed. *Thuia borealis*, reaching a height of 40 feet, perfect in form; *Thuia plicata gigantea*, stout, and in fine character; *Tauca Mertensiana*, 50 feet high, graceful and distinct; *Abies Nordmanniana*, of similar dimensions, even yet one of the most beautiful in open spaces; *Abies grandis* was also finely represented by specimens 50 feet in height. Among such fine trees it was curious to notice a singular *Thuia dolabrata*, that at some time must have had some injury inflicted on the leading shoot (perhaps by squirrels); this now had formed a dense wide-spreading shrub, some scores of short shoots having risen from the base, and so far, not many have attempted to attain a greater height than 3 or 4 feet. Now we pass through a fine sweep of Bracken, and come to the Wellingtonias; these and others in various parts are noble specimens, many reaching a height of 70 feet, and full of vigour. They doubtless were among the earliest introductions, and well they have done. Just one specimen of *Abies Pinsapo* now came in sight; singular to say, in the hard winter of 1881, all the trees of this species were killed. The Cedar-avenue now comes in view, and truly this is a magnificent sight.

Coming nearer again to the castle, and entering the pleasure-grounds, may be noticed *Cupressus macrocarpa*, a splendid tree, dense, and fully 50 feet high. Here, too, was *Picea Morinda*, or *Smithiana*; this is one of the most distinct and beautiful trees on the estate. Standing well away from other specimens, reaching a height of some 60 feet, its characteristics impress themselves most forcibly. Its wide-spreading branches have a somewhat pendulous habit, and from the lower side of these, feathery branchlets hang down in a perpendicular manner, 4, 5, and 6 feet in length, gracefully swinging to the slightest movement of the breeze. Fine trees of the Spanish Cork, always interesting. A grand *Pinus excelsa*, has now upon it old cones of last year, also numerous younger ones hanging in clusters at the ends of the shoots. *Taxodium distichum*, with its

There are grand *Magnolias* with their large cup-shaped flowers, *Liriodendron tulipifera* full of flower, and Portugal Laurels densely covered with bloom. Here, too, is the unique *Eucalyptus coccifera*, an immense tree, now passing out of flower (see *Gardener's Chronicle*, vol. ix., 1891, fig. 42, p. 169). I send portions of shoots, in which you will observe the singular capsules now left by this season's flowers, the buds already formed for next year, and the incipient stages of the same for the year following. This tree is now 70 feet high, and covers a space 40 feet from the stem each way; the trunk is 13 feet in circumference 3 feet from the ground, and is covered with a singularly rough bark; the branches, however, stretching out as described, are now shedding their bark, and as it falls in lengthy pieces the exposed parts of the branches are of a bright tawny colour,

Here, too, is a grand *Cedrus Libani*, with a stem 18 feet in circumference at 3 feet from the ground, whose lower, wide-spreading branches sweep the grass; this tree is fully 80 feet high. *Abies nobilis*, *grandis*, and *Nordmanniana* are here, too, in fine condition. *A. cephalonica*, 90 feet high, dense and compact, but slightly overhanging; the gale of March, 1897, has moved it out of the perpendicular. *Pseudo-Tsuga Douglasii* is well represented. One magnificent specimen, some 120 feet high, had as its neighbour a large Tulip-tree, with two leading stems. This latter fell during the storm mentioned, and as each stem passed down the sides of the *Abies* every limb was stripped off; so now a very tall tree, with a good head, a stem some 70 feet of its length with numerous shoots all over, appears more like an immense decorated post than a growing tree.



FIG. 87.—*LINOSPADIX(?) PETRICKIANA*; HORT. SANDER. (SEE P. 298.)

pale-green foliage; *Cryptomeria japonica*, 60 feet high; *Sequoia sempervirens*, a noble specimen; *Pinus insignis*, 70 feet high; *Thuiopsis dolabrata*, a perfectly-shaped tree, with branches down to the ground, and covering a space 30 feet through. *Cupressus* again in variety, and close by the castle is a grand piece of *C. macrocarpa*, 60 feet high, perfect in shape, and robust in health.

In the American-garden were fine clumps of hardy Azaleas, 20 feet through; specimen Camellias and clumps of the same. One Camellia was shown me the stem of which is 4 feet in circumference, the plant 30 feet high, and as much through. The late Mr. Pince, fifty or sixty years ago, sent regularly, and had cuttings from this plant; these were rooted and used for stocks, on which better sorts were grafted. These Camellias are healthy and clean, flower freely, and stand all weathers as freely as an *Aucuba* or Laurel.

and wonderfully smooth. In the winter of 1881 this tree was checked in a singular manner. Up till then the growth at the extremity of the branches was continuous and regular. Every season, from the spring of 1882, this has been much less so, and instead new shoots have pushed out on the bare stems, so that now the centre of the tree is more filled than had been the case heretofore. To see branches of some 18 inches in diameter, with numerous shoots of small dimensions, many only 3 inches through, these latter being almost upright while the lower branches are almost horizontal, adds considerably to its singular and special interest. This tree is said to have been grown first in a pot, then roughly treated as of little consequence, then at last discarded; ultimately it was planted in its present position by one of the garden labourers just to get it out of the way. Truly a strange experience for such a rare species.

Passing into the kitchen-garden, Mr. Powell, who now rents this portion and the glasshouses, lamented the absence of rain. In the vineries were fine crops of Black Hamburg and Foster's Seedling Grapes. Tomatos, Cucumbers, and Peaches are also largely grown. Ferns and table plants occupy other glasshouses, all houses being devoted to plants that will sell, rather than those that might be used for the adornment of the castle, as in former days. It is fervently to be hoped that ere long the castle may be again occupied by its owner. W. S.

THE PUBLIC GARDENS, DORCHESTER.

If it be borne in mind that this plot, gay with colour during the spring and summer months, was but a few years ago the fair-ground and cattle-market, a large part being also used as a nursery, the change in

its appearance seems almost magical. Those arriving at the station of the Great Western Railway may reach the gardens in a few minutes. The space enclosed measures about 5 acres, and the most is certainly made of it.

The configuration of the ground does not lend itself to picturesque treatment, but Mr. W. Goldring who laid it out, and personally superintended the planting, has given it a pleasing, natural appearance, and it only requires a few years to bring out its finer effects. The grass slopes form a pleasing feature, and help to keep the walks out of sight from whatever point the garden is surveyed. There are many large flower-beds in the upper parts of the garden, as well as on the lawn adjacent to the band-stand, and the only dead-level part is to be found where tennis and croquet courts are placed.

Stretching along one side of the grounds, are two rows of large trees, Elms, Sycamores, and Limes, which add greatly to the appearance of the grounds. Many such avenues are met with in various parts of Dorchester, forming delightful shady walks for long distances out of the town.

The boundaries of the garden are marked by ornamental trees and shrubs, which need only a few years to shut out the view from the public roads. That Mr. Harris, the head gardener, makes good use of the space at his command will be readily admitted, the beds being well filled with masses of gay colours. Ivy-leaf Pelargoniums are much employed; also bronze tricolor, zonal, and varieties, Lobelias, &c. Perhaps, however, the beds that make the finest effect in August were those of the "American Mammoth" Verbena, the plants having been raised from seed. The trusses of flowers are large, the tips of good size, the eye clear, and the colours vivid. Some beds of the American Giant Petunia are also a feature; the plants strong, with large, many-hued flowers. Ageratums are also used with good effect. Cannas and Lobelia cardinalis in variety are very noticeable plants. Among yellow flowers, mention ought to be made of the large beds of *Calceolaria aurea floribunda*, which have a purplish-brown flowered variety planted in the centres; it is similar to the old favourite, Princess Helena. These beds are capital, the plants having stood the drought remarkably well, and doubtless they will continue to flower for some time to come if rain should fall. Shrubby Phloxes, *Tritoma Uvaria*, *Helianthus*, and other herbaceous plants, were flowering profusely; *Helenium pumilum* was planted in several large masses. Among species of *Spiraea* in flower were *S. callosa alba*, and a quantity of *S. bumalda*, Anthony Waterer, the latter now covered with its deep rose-coloured corymbs of blooms.

The Roses had been gay, and many of the plants still carried blooms. Masses of *Rhododendron*, *Conifers*, ornamental evergreen and deciduous shrubs, afford diversity of form and aspect. The turf was observed to be in excellent condition. *W.S., September.*

EXPERIMENTAL SPRAYING OF FRUIT TREES.

DURING 1897 the experimental spraying of Apple-trees, carried on by the Department of Agriculture of the Province of Ontario, was conducted in twenty-five orchards, situated in twenty-three counties, covering the Province from Sarnia to Lancaster. The original plan was for six sprayings at each point. This would have finished the work early in July. About this time, however, scab was making such headway that it was decided to make another application. Accordingly, the men were sent out again, and the work was completed by July 18.

Only one solution was used—Bordeaux Mixture—according to the following formula:—Copper sulphate, 4 lb.; fresh lime, 4 lb.; water, 40 gallons. To this, in every case, was added 4 oz. of Paris Green.

On account of the law, which forbids the spraying of fruit-trees while in full bloom, and on account of rain, many applications were omitted, and numbers of applications were discounted or lost by being closely preceded or followed by rain. However, the results were highly satisfactory, in some

cases the full 100 per cent. of clean fruit being obtained. These trees and their fruit were absolutely perfect.

A great deal of interest was taken in the work, and the gentlemen in whose orchards we sprayed did all in their power to assist us. The people are gradually waking to the fact that spraying is indispensable to the up-to-date orchardist, and every year the experimental (or more properly now, the instructional) spraying of fruit trees is attracting more and more attention. The attendance this year was 60 per cent. greater than last year, and inquiry by mail was ten times as great.

In a recent report by the entomologist of the State of New York, 356 species of insects which commit depredations on the Apple are catalogued, and each is known at times to feed upon the Apple from choice. Many others will feed upon it when other plant food is lacking, and he adds:—"The least harmful among them may at any time, through such sudden and inexplicable multiplication as is often witnessed in the insect-world, become a serious pest." Add to these the injurious fungi, and you will have some idea of the phalanx of enemies the Apple-grower has to face. I believe the most effective artillery we have is the spray-pump, but to be effective the proper ammunition must be used at the right moment. With every insect there is a time when it is most vulnerable with some treatment, which can only be successfully applied for a few days in the season.

I want to give you a few of the actual results obtained in our work this year. In calculating the percentage of perfect fruit, the following plan was adopted:—A part of the tree was stripped of every Apple; these were carefully examined, and any specimen which had a worm or a spot, no matter how small, was rejected.

IN MR. WARNER'S ORCHARD AT TRENTON.

Apples.	Experimental Spraying.	Unsprayed.
Spy	76 per cent. clean	8 per cent. clean.
Snow	75 " " "	No clean fruit.
Wealthy	90 " " "	20 per cent. clean.
Summer Pearmain	75 " " "	5 " " "
Baldwin	90 " " "	10 " " "
Bottle Greening...	76 " " "	5 " " "

The packers said it was the best fruit they had packed this year; and Mr. Warner says the increased value of the crop on the twenty-five sprayed trees was 100.00 dols.

IN MR. J. P. THORN'S ORCHARD, PICTON.

Apples.	Experimental Spraying.	Unsprayed.
Spy	90 per cent. clean	10 per cent. clean.
Colvert	90 " " "	" " " "
St. Lawrence ...	75 " " "	10 " " "
Snow	75 " " "	25 " " "
Golden Russet ...	90 " " "	25 " " "
Bellefleur	75 " " "	10 " " "
Swaar	75 " " "	10 " " "
Red Astrachan ...	80 " " "	15 " " "

Mr. Thorn says that the spraying of the twenty-nine trees we worked on was worth 75.00 dols. to him. He further says that while unsprayed Spys were worth 2.00 dols. per barrel, he was getting 3.50 dols. per barrel for sprayed fruit. *W. M. Orr, Fruitland, condensed from the Report of the Fruit-Growers' Association of Ontario.*

ORCHID NOTES AND GLEANINGS.

TRING PARK.

THERE is a good show of Orchids in Lord Rothschild's garden at the present time, the showier sections contributing largely to the display. The best displays are found in the intermediate and Cattleya-houses, and in the largest of the former a

group of varieties of *Dendrobium Phalaenopsis Schroderianum* arranged with varieties of *Cattleya labiata autumnalis*, with plants of *Oncidium varicosum* in bloom overhead.

The Cattleya-houses showed a number of *Cattleya labiata Schroderae*, well furnished with flower-sheaths, and some good examples of the favourite, fragrant *Cattleya aurea*; a remarkable form of *Laelia flava* with reddish-tinged flowers; a splendid example of *Laelio-Cattleya* × *Nysa*, *Cattleya bicolor*, *C. Loddigesii*, *Laelia pumila*, and some few other pretty species.

The houseful of white and coloured varieties of *Laelia anceps*, which thrive so well at this place, are well furnished with flower-spikes. The large plants of *Phalaenopsis* still maintain their vigour, though not without showing indications of the effects of the protracted hot weather. In bloom are some varieties of *P. Esmeralda*, which, though not so showy as some of the species, is attractive. Plants of the pretty dwarf *Phalaenopsis Lowii*, *P. violacea*, &c., were remarked.

In the cool-houses some good forms of *Odontoglossum crispum*, *O. Pescatorei*, *O. nebulosum*, and other species are in bloom, as well as *Cochlidia vulcanica*, *Masdevallia Chimera Rozei*, *M. bella*, the singular mossy-stemmed *M. muscosa*, the beetle-like *M. triaristella*, and *M. trichate*, *M. torta*, and others, and some *Restrepia* and *Pleurothallis*.

Other noteworthy Orchids in bloom are *Dendrobium formosum giganteum*, *Miltonia Warscewiczii*, and others; *Vanda Kimballiana*, *Cirrhopetalum ornatissimum*, and *Ansellia confusa*.

The Carnation-houses are well furnished with blooms, especially the one filled with plants of *C. Mrs. Leopold Rothschild*. Among the flowering bulbous plants are some excellent scarlet-flowered *Nerines*, and blue *Griffinia hyacinthina*.

CATTELEYA SUPERBA SPLENDENS.

As with many other Orchids having a wide range of distribution, the quality of the flowers of *C. superba* depends entirely on the locality from which they are derived. From some localities a plant of the variety known as "splendens" could not be obtained; whilst from the locality where "splendens" is found, the ordinary run of the flowers is far superior to that of flowers from other districts, and as is luckily the case, the plants seem to grow and bloom with greater freedom. Such an importation was the one recently secured by Messrs. Hugh Low & Co., by the evidence of the flowers sent by various correspondents. That taken from a plant with seven blooms, sent by Joseph Broome, Esq., Sunny Hill, Llandudno (gr., Mr. A. Axtell) is the best. Its broad sepals and petals, which expand flatly, and measure more than 5 inches in width, are of a glowing dark purplish-rose, the sepals being slightly margined and tipped with white. The side-lobes of the lip (through the opening in which the fleshy white column shows) and the front lobe are ruby-coloured, the base of the lip and insides of the side-lobes of blush-white, and the small disc of chrome-yellow. The plant requires to be grown rather warmer than the varieties of *Cattleya labiata*, and experience has proved that it succeeds better when grown in baskets or suspended Orchid-pans than in pots placed on the stage.

DENDROBIUM AQUEUM.

This would be a favourite species, if grown up to its best, as was shown by the high price realised at a sale some time ago by Messrs. Protheroe & Morris for a few fine specimens in flower. It is not a difficult plant to cultivate if its wants be understood; and growth is rapid, if abundance of water be afforded during the growth period. It requires a rest more than usually long in a cool dry house, enough water being applied to prevent shrivelling. Thus cultivated, the foliage is retained on the pseudo-bulbs that are bearing flowers, which is an added attraction. The flowers measured about 1½ inch in width, and are produced singly or in pairs on the upper portion of the pseudo-bulbs. They are white, with a peculiar yellowish-silver veining, and a primrose-yellow tinge on the lip. It was first introduced from

the Nilgiris in 1842, and has since then been found in other parts of southern India. It is also known in gardens as *D. album*, and was figured under that name in *Wight's Icon. Pl. Ind., Or.*, t. 1645, but Lindley's name having the priority, is the correct one. The name *aqueum* was given, according to the author, on account of "its pale green watery flowers," an appearance which may still be seen in badly-cultivated specimens, though when well-grown its flowers, which are fragrant, are almost white. A portion of a leafy pseudo-bulb with flowers attached is sent by Mr. John S. Treseder, manager to Messrs. Heath & Son, Cheltenham, who received the plant from India as "white *Dendrobium Cambridgeanum*."

CATASETUM MACROCARPUM.

This fine species is imported from various localities, but the best forms appear to come together with *C. Bungeoethi*, the importations from that quarter also including some of the beautiful, variable hybrids between the two species named, called *C. × splendens* by their original importers, Messrs. Linden & Co., of Brussels.

A showy form of *C. macrocarpum*, with bright-yellow fleshy lip, and French-white sepals and petals, spotted with rose-colour, has been sent us by Mr. De la Salle, Enbridge Lodge, Newbury (gr., Mr. Geo. Ellwood), who obtained it for *Cynoches chlorochilon*. The plant is described as carrying a fine spike of fifteen flowers, and another spike in course of formation. *J. O'B.*

Hypericum galioides was originally described by Lamarck in the fourth volume of his *Encyclopædia*, which was published in Paris during the French Revolution. It is dated "L'an IV de la République"—i.e., 1796-97—which proves the plant to have been known for more than 100 years. The type-specimens had been sent to Lamarck by John Fraser, one of the most noted of the earlier American plant-collectors. But even before it had been named and described, it was already in cultivation in the National Garden in Paris, having been raised there from seed sent home by Michaux. Notwithstanding its early introduction to Europe, it has been almost entirely lost sight of till quite recently, when through the agency of Professor Sargent and the Arnold Arboretum it has been re-introduced, and has flowered at Kew and several other places. The figure now published was made from a specimen grown in Mr. Gumbleton's garden at Belgrove near Cork, and is the first illustration of this species that has been published in Great Britain. The plant is not one that can claim a place among the best hardy shrubs, or even among the best *Hypericums*. Still, it is interesting and pretty, and may be welcomed as an addition to the few hardy shrubs that flower in autumn. *W. J. Bean, Arboretum, Kew.*

FORESTRY.

OUR WOODS AND FORESTS.

(Continued from p. 213.)

It is the sylvicultural side of our woods and forests which appeals most strongly to the practical foresters of this country, or at least to those of them who feel that something ought to be done by the State to put their particular industry on a more satisfactory footing. No doubt some allowance must be made for professional zeal and enthusiasm when listening to the opinions of the advocates of advanced forestry practice in this country, and the fact may sometimes be lost sight of that proprietors, and not foresters, must settle the question of British forestry reform. But for all that, a good case may still be made out for more serious recognition of economic forestry by the Government of a country which possesses a considerable proportion of semi-waste land, and a surplus population more or less in need of employment. Technical education is beginning to receive the attention it deserves at the hands of the State; but unless it can be turned to practical account, it will not be a complete success.

Whether the Government be justified in granting money for the teaching of scientific forestry in Edinburgh and other centres by the actual circumstances under which British forestry is carried on, is not an easy question to answer in an impartial spirit; but I have little hesitation in stating that the proper management of our Crown woodlands would have as much (if not more) educational influence upon the forestry practice of the country than lectures and classes, which only reach a few working foresters, or prospective land-agents. That these classes are not in themselves sufficient to attain the object in view, is evident from the strong appeal recently made to the Board of Agriculture for funds to start an experimental forest area in Scotland. So far, the only response to this appeal has been a verbal one, characteristic of Governments in general, but whatever the final verdict may be, England and Wales have as much right to some consideration in this question of forestry education as Scotland.

Putting all local prejudice aside, if a properly-equipped British Forest School is to be established, Edinburgh (or its vicinity) is undoubtedly the place for it, and we have nothing to say against the scheme suggested by our friends beyond the Tweed. But it seems absurd to grant a comparatively large sum of money for establishing a forest area in Scotland, and at the same time allow the splendid opportunities presented by our Crown woodlands for educational purposes to remain neglected. If any good reason existed for preserving the obsolete methods of management more or less in vogue, we should have little to say against them. *A. C. Forbes.*

(To be continued.)

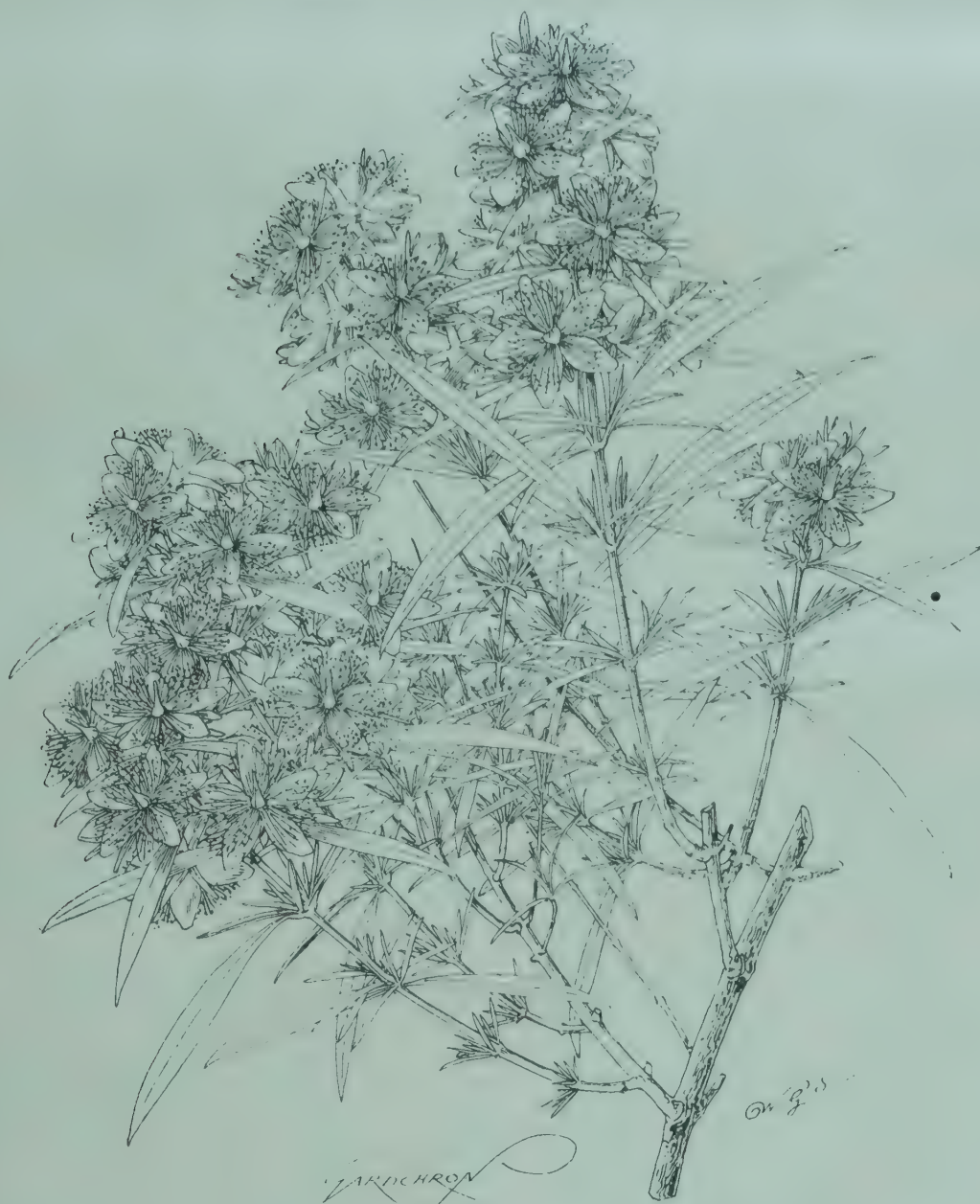


FIG. 88.—*HYPERICUM GALIOIDES* (LAMARCK): FLOWERS YELLOW.

DENDROBIUM FORMOSUM VARIETIES.

While some importations of this grand white-flowered Orchid exhibit tolerable constancy in the similarity of the yellow colour on the lip, others show great variation; but we have not previously noticed such a wide difference as that shown in the case of two flowers sent by Reginald Young, Esq., Fringilla, Linnet Lane, Sefton Park, Liverpool (gr., Mr. Poyntz). The colour on the lip of the one is of a pale chrome; on the other a fine, glowing, dark tint of reddish-orange, even finer than that seen in the labellum of the best form of *Dendrobium Jamesianum*. The varieties showing these peculiarities should be marked, in order to see whether they are maintained in their present intensity. Fine forms of *Cattleya maxima* and *C. Bowringiana* were also sent for inspection.

HYPERICUM GALIOIDES

(LAMARCK).

UNDER cultivation in this country the American species of *Hypericum* are by no means so beautiful as the Asiatic and European ones are, but *H. galioides* is one of the most attractive of them. It is a native of the Eastern United States, and is a compact bush, growing 2 feet to 3 feet in height, whose slender stems are well furnished with narrow, linear-lanceolate leaves, varying from half-an-inch to 2½ inches in length, by about one-eighth of an inch in width, and dark green. The flowers are yellow, half to three-quarters of an inch in diameter, and they are borne in small axillary and terminal cymes. The plants commence to bloom in July, and continue till the present time,

FLORISTS' FLOWERS.

NEW CACTUS DAHLIAS AT SLOUGH.

I HAVE known the Dahlia to be cut down by frost during the second week in September, but this year the corresponding week of the month was characterised by tropical heat, and the Dahlias at Mr. Turner's nursery, at Slough, though well cared for in the matter of moisture, hung their heads under the effects of the burning sunshine. At Slough, success is not so much the result of the rich soil in which the roots are planted, as of the liberal mulching on the surface, and copious supplies of water when required, with close attention to freedom from vermin.

I was more particularly interested in the Cactus varieties. The Cactus varieties have enormously increased during the past three years, and they are nearly as numerous as the show varieties. Without exactly giving the varieties in the order of alphabetical arrangement, the following may be taken as representing the best of the new varieties of the present year:—Capstan, soft brick-red, with a tinge of apricot at the base, 3 feet in height, good habit, throwing its flowers well above the foliage on long stems; it is early to flower, and produces its blooms much more abundantly than others. Laverstock Beauty, soft red or vermilion—a very good type of Cactus indeed; good habit of growth, the flowers produced on stiff, stout stems. Mary Service, a lovely variety, of a pleasing tint of pinkish-apricot, with a pleasing yellowish-brown base; it is taller in growth than the foregoing, and quite a free bloomer, but does not throw its flowers well above the foliage; it is a refined type of flower, of decided value for exhibition purposes. Britannia is a deservedly popular variety for exhibition purposes; it is of a delicate shade of soft salmon-pink, with a base of brownish-apricot—in the younger blossoms especially there is a lovely tinge of colour; early to flower, and free for one of this type of Dahlia; it produces its blooms on long, stiff stems. It does not require much thinning-out to get perfect flowers; in height, it is about 3 feet. Keynes' White is an improvement upon the white Cactus varieties, and can be caught of highly refined character, but it is of tall and coarse growth, and except for exhibition purposes, of little use in the garden; it requires a lot of thinning to obtain well-developed blooms—height 5 feet. In the variety Arachne, we get a remarkable break, for it is distinct both in form and marking; the centre of each petal is white, with a broad band of bright crimson on either side; it has an indifferent pendent habit of growth, forming a spreading bush, and the flowers are inclined to come then—height 3½ feet. Alfred Vasey has a colour difficult to describe: the raisers say that it “reminds one of a reddish-sunset, enlivened with aurora-like reflections of amber and pink.” The flowers are produced on short stems, and the blossoms were somewhat irregular; it is, however, likely that a moister season will produce its better character; it is a variety requiring to be well thinned out—3½ feet. Regulus is a very bright deep crimson self, with a good stem and habit, one of the brightest-coloured varieties grown, and perhaps, owing to the drought, showed a tendency to go back to the decorative type. Island Queen is of a soft lilac-mauve colour, very distinct and pleasing, its flowers produced on good long stems, and inclined to be somewhat pendent; it is a variety that should not be grown too strong; perhaps owing to the season it showed a tendency to come cross-eyed. Casilda is a variety with a yellow centre, and pinkish-salmon basal florets, but has a bad habit of growth, hiding its flowers among the foliage. Falka is another variety, with good stems to the blossoms, but hides its flowers, and the habit is by no means good. Daffodil, a delightful Cactus of a pale canary-yellow colour, has proved very disappointing, coming green-eyed, and quite coarse. Night is an improved Matchless, and remarkably good dark Cactus, being of an intense dark maroon, nearly black; excellent habit, a free grower, producing its flowers on long stems. Amber, pale orange-red or amber colour, is

disappointing, as it shows a tendency to revert to the decorative type. Tillie, salmon, suffused with pale rose and mauve, has also proved disappointing; it is of dwarf habit, but hides its flowers. Ruby, rich ruby-red and bright carmine, also proved disappointing, though it is fine in colour, and has a good stiff stem. Mrs. John Goddard is of a very fine rich crimson-scarlet colour; the brilliant blossoms, borne on long stems, are thrown well above the foliage; height 3½ feet, with an excellent habit of growth.

The foregoing may be taken as the best of the new varieties of the present season. Of those of 1897 the best are Starfish, pure orange-scarlet or coral-red, very free and constant, every bloom good, the habit excellent, and the flowers borne well above the foliage. Cycle, rich ruby-red, somewhat tall-growing, but good habit; requires disbudding freely, but decidedly good. Mrs. Kingsley Foster, very distinct, old gold coloured; strong growing, and good habit. Cinderella, very good when at its best, is bright-purple colour, and a very good Cactus type. Charles Woodbridge is probably the very finest and most constant Cactus variety in cultivation, and if one variety only were grown this should be it. Fantasy is not so good as last year; it has small flowers, and they are hidden in the foliage, requiring a great deal of disbudding to induce them to throw their stems above it.

The best six Cactus Dahlias of 1896, judging by the present season's results, are Beatrice, Fusilier, J. E. Frewer, Mrs. Beck, Mrs. Gordon Sloane, and Miss A. Nightingale. R. D.

STORING DAHLIAS.

After taking up the roots, and turning their stalk downwards to drain the moisture from the latter, and partially dry the tubers, which is best done under glass or in an airy shed, I fasten a label with the name of the variety to each in a secure manner, and place the tubers neatly together in a dry, frost-proof potting-shed, beneath the bench, and cover with fine soil or fine coal-ashes. I have wintered the roots with equally good results in dry cellars, without any covering, merely shaking some straw over them, and in this manner the tubers keep plump till the spring; of course, the very special and more costly varieties get a little more care, being put into Pelargonium-boxes, and covered with moderately-dry leaf-mould. Dahlia-roots should be stored in an even, rather low temperature, and on no account should they be allowed to get much shrivelled. H. Markham.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorset.

Orchids in Flower.—Amongst the more beautiful are *Dendrobium Phalaenopsis Schroderianum*, which has few equals in the way of producing graceful sprays of blossoms that are very suitable for cutting, if this be desired; and these keep a long time in a fresh condition in water. The plant does not vary in habit, but the flowers do so in their tints considerably, some being white, and others of crimson-purple. The plants which are in flower should be placed in a part of a warm-house where the ventilation is good; they would, however, last just as long in the Cattleya-house, the drier air of which suiting them even better than that of the warm-house. When the spikes are removed place the plants altogether in one part of the house, where the fullest amount of sunshine will reach them, which will have the effect of maturing the new pseudo-bulbs. While at rest the plants must not be excited, or premature growth will be started. And to this end the air must be dry; still, enough water must be afforded as will prevent shrivelling, or the roots perishing.

D. bigibbum, *D. Statterianum*, *D. superbiens*, and *D. Goldii*, being species that are about to flower, should be afforded the same kind of treatment as *D. Phalaenopsis Schroderianum*. *Spathoglottis aurea*, *S. Fortunei*, *S. Lobbi*, *S. plicata*, and *S. Kimballiana* now completing their growth should be hung close up to the roof, so that the pseudo-bulbs may mature. When the leaves of these plants change colour, water must be gradually reduced in frequency and quantity, and when these have all fallen off, water should be withheld, and the plants allowed to rest.

Mormodes, *Cynoches*, &c.—Notwithstanding the past hot summer, many *Catasetums*, *Mormodes*, and *Cynoches* still retain their foliage, and these plants should for the present be kept warm and fairly moist at

the root, and near to the roof-glass. When the leaves change colour remove the plants to a house somewhat cooler and drier. If matured they will need no water in the resting season, but pseudo-bulbs ill-matured may require water, such being liable to shrivelling.

Thunias are retaining their foliage, and being usually in a dry atmosphere and in full sunlight, red-spider is apt to infest the leaves. When this is found to be the case, examine and cleanse them frequently, as these acari will spread to more valuable plants. In order to clear off red-spider, lay the plants on their sides and syringe the under-sides of the leaves with warm rain-water, in which soft-soap is dissolved; or if badly infested, use Richard's XL All nsecticide.

Miltonia Phalaenopsis that have been growing in the cool-house may now be placed near to the roof at the warmest part of the intermediate-house, and afforded water abundantly at the root, and aired freely whenever the weather is mild. The *Chimæra* section of *Masdevallias*, as *M. Chimæra*, *M. bella*, *M. nycterina*, *M. Winniana*, *M. Backhouseiana*, *M. stupenda*, *M. Roezli*, *M. gongora*, and *M. Wallisii*, may likewise be removed to the same house immediately fire-heat has to be employed in the cool-house. These plants, as a rule, are much infested by insects, requiring a good deal of time to be spent in keeping them clean.

Lælia harpophylla is now finishing up its growths and flower-spikes, and calling for copious applications of water till such time as the flowers open, when the quantity should be much reduced. This species thrives in a slightly warmer temperature than that in which *Odontoglossums* are grown, as does *Epiphrontites Veitchii*. This last-named plant suffers during the winter months if much water be afforded, the tips of the leaves becoming spotted. Instead of affording water in the usual manner, I merely sprinkle the surface of the compost with a fine rose water-can, and should spots appear on the tips of the leaves, the plant is kept on the dry side for about eight days.

Odontoglossum Insleayi, *I. leopardinum*, and *I. splendens*.—The flower-spikes will now be pushing up, and the plants will do better if they are placed with those of *O. grande* in the coolest and driest part of the intermediate-house. When the flowers fade, afford the plants a period of rest. Owing to the partiality of slugs for the flower-spikes of this *Odontoglossum*, the plants should be isolated as much as possible on pots, &c., and a ring of wadding placed around the base of the spikes.

Grammatophyllum Ellisii.—Any plant which has made up its growth may be removed to the cooler part of the East Indian-house, and afford just enough water to prevent the pseudo-bulbs from shrivelling.

Vanda tricolor, and others of that section, requiring attention in the matter of re-potting, should be kept somewhat on the dry side for one week following the re-potting.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord Gerard, Eastwell Park, Ashford.

Spring Bedding Plants.—October affords the best time for planting out in the beds the various plants which are to make the flower-garden gay in the spring. The beds and borders so planted should have a liberal dressing of decayed manure, and be deeply dug. The planting should be carried on when the soil is somewhat dry. In regard to mixed beds, one that is planted with *Myosotis dissitiflora*, or other variety, intermixed with a yellow-flowering Tulip, affords a pleasing effect; and if *Silene pendula* is used with an edging of *Pyrethrum aureum*, which is always better coloured in the spring months than later, it makes a desirable mixture. If the yellow Wallflower is employed in a bed, the dwarf *Myosotis* or *Aubrietia* in variety go well together. The dark-coloured Wallflowers look well with an edging of some light foliage-plant, such as *Antennaria tomentosa*, or *Arabis alba*. Other plants which can be used judiciously, mixed with various bulbs, are *Alyssum saxatile*, *Polyanthus*, *Primroses*, both double and single-flowered; *Pansies*, *Violas*, *Hepaticas*, *Phlox divaricata*, *P. nepalensis*, *P. Nelsoni*, and *Gentianas*. A certain amount of care must be exercised in the planting of these subjects, to see that no soil remains in the crown of the plants after planting, as in wet weather this very frequently causes the crown of the plants to decay. In places where spring-bedding is not carried out, the following dwarf shrubs are very suitable for filling the beds during the winter. Among the best are *Aucubas*, either male or female, with green or variegated leaves; *Hollies*, with variegated leaves; *Box*,

Euonymus in variety, Golden Yew, *Retinosporas* (*Thuya*), *Arborvitæ*, Junipers, Pontic *Rhododendrons*, Sweet Bays, and dwarf bushy plants of the common Laurel. A due admixture of the pyramidal Conifers with the flat or round-headed shrubs, with self or variegated foliage, has a pleasing effect when carried out in a tasteful manner. Where shrubs are not to be had, evergreen twigs may be used instead.

Herbaceous and Shrubby Phloxes.—The present is a suitable month for lifting and replanting Phloxes, if it be desired to increase the stock; or, if owing to exhaustion of the soil, the blooms have got small. Only the portions at the circumference of the clumps should be replanted, the central parts being thrown away. If very fine heads of bloom are looked for, plants raised from cuttings only should be planted. The stations for these plants should be heavily manured and trenched. Arrange the plants with due regard to their colours, the intervals apart between the plants being determined by the strength of the variety. In planting, set them a little lower in the soil than they were previously, and make the soil firm about the root.

Calceolaria Cuttings.—These should now be made and inserted in the cutting-bed without delay, a cold frame affording the best kind of protection for them. The bed should consist of leaf-mould and sharp sand, the cuttings being put in about 4 inches apart. Be careful not to afford the bed much water, or damping-off will soon occur. Let air be afforded on all favourable occasions, and protect the cuttings from frost. For general purposes, Golden Gem, Prince of Orange, and *Amplexicaulis* (a fine lemon-coloured variety) are best for beds, the last-named being, however, not suitable for early work.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Peaches and Nectarines (continued from last week).—This being the purchasing season, I would advise the following being obtained from the nurseryman. The best variety of Peaches to bear early fruit, when forced or naturally grown, are Early Alexander, Hale's Early, and Rivers' Early York. Of Nectarines choose Early Rivers, and Lord Napier. For later forcing there are not any better than Royal George, Bellegarde, Noblesse, Violette Hative, Dymond, Grosse Mignonne Peaches; and of Nectarines Elruge, Pitmaston Orange, and Pine-apple. The latest Peaches for houses or walls are Barrington, Sea Eagle, and Princess of Wales, the last-named being an abundant bearer, the fruit of large size, good flavour, and of a yellow colour with red streaks; the flesh is not melting. Those who prefer to grow only the best Peaches in season from May to September, should possess Royal George, Bellegarde, and Noblesse; and Nectarines, Lord Napier, Elruge, and Pine-apple. The sort of tree to plant should be that which is most suitable for the shape of the house and trellis, choosing a dwarf-trained tree for a low lean-to at the front, where the glass and trellis are near the surface of the border. In some houses the trellis is erected equidistant from the roof and the border; or it is curvilinear, and may reach two-thirds of the breadth of the house, the back part being about one-third of the height of the house above the border, so as to admit of sufficient light reaching any trees, which may be either dwarfs or half-standards, planted against the back wall. In forcing-houses where the front wall supports the roof some considerable height above the surface of the border, and there are no front lights, standard trees are the more suitable, dwarf-trained trees being planted against the ends of houses. The fan-shaped tree is that generally liked, and is, moreover, the most natural to the Peach. In buying fan-trained trees it is more economical to buy "maidens," or such as have been once cut back. Some gardeners do not mind if the Peach has a central stem after the first year's pruning, but I do not like them, and prefer a tree without a stem above the first pair of branches. A young tree should be strong and healthy, with no gouty appearance about the point of budding. The trees should be planted at such a distance apart that they have space to develop to a good size, and the roots have plenty of feeding space. It is better to have fewer trees than to crowd them together, and a distance of 15 feet from stem to stem is the least that can be recommended. This year growth out of doors is late, hence nurserymen will be late sending out the orders; when the trees do arrive, plant them forthwith.

Cherries.—The following free-bearing varieties are

recommended for the Cherry-house, viz., Early Rivers, Elton, Black Tartarian, and Bigarreau.

Plums.—The following will give satisfaction under glass, viz., Jefferson, Transparent Gage, Kirke's, Dennison's Superb, and Cox's Golden Drop.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Lifting Beet, Parsnips, and Carrots.—In removing these roots from the soil, do not cut or break them with the tool used in the work, as in the case of the Beet, the damaged root bleeds on being cooked, and is spoiled. The leaves should be cut at least 2 inches from the crown for the same reason. Some gardeners lift the whole of the crop of Beets, storing the roots away in damp sand before sharp frosts occur to damage; others, on the contrary, lay in the roots close together on a sheltered border, covering them in the event of hard frost with leaves or litter, and in this way the roots keep fresh and juicy till late in the spring. Parsnips, when lifted, may be stored in cold sheds, like Beet and Carrots, or they may be left in the soil, and lifted at any convenient time, enough roots being dug when hard frosts appear imminent to cover a few weeks' consumption.

Carrots, not being a crop that can be exposed to much frost, should be lifted during this month, or as soon as winter weather actually begins; and, as in most kinds of soil crooked and split roots are found among Carrots, the best roots should be selected and kept by themselves, whilst those that are inferior should be put aside for immediate use, or as flavouring materials. If the Carrots are placed horizontally in the root-house or cellar in banks of moist sand or mould, with their tops protruding 2 inches, they will keep in good condition for four months, whereas if the tops are buried under the soil, rotting of the roots is soon set up.

Mushrooms.—Let a steady temperature of about 58° be maintained in the house or cellar, which may be done at this date, with the warmth afforded by beds recently made. If fire-heat is required, the air must be rendered moist by damping the paths, walls, &c., several times a day, or as often as it may appear to be necessary. Prepare materials for fresh beds under cover, and sift loamy soil in readiness for soiling-beds. Field-Mushrooms will have become more plentiful since the much-wanted rain has come, and these should be collected.

General Work.—Exhausted crops of all kinds should be cleared off the ground, and all kinds of work that can be performed at this season should be expedited, such as earthing-up Celery, &c. Chicory may be taken up, and the tops, cut off to within 1 inch of the root, and the latter laid in half sand and leaf-soil, with the tops above the soil, the boxes or pots containing the roots being placed in a warm, dark cellar or Mushroom-house.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Apricots.—Complaints are sometimes made by gardeners of the difficulty they experience in the cultivation of this fruit-tree, the trees in some instances dying by degrees as soon as they have attained full size, and even sooner. This mishap is more to be feared in southern than in midland counties, and is especially prevalent on soils which consist of light loam resting on sand or gravel, the Moorpark being more liable than any other variety. I am of the opinion that the inclination of the Apricot to make early growth has much to do with this loss of whole limbs, the young and tender shoots getting injured by night frosts. In warm districts, where dying-back is of common occurrence, I would likewise recommend the planting of the Apricot on a western instead of a south aspect, and if the soil consists of light loam, to make it heavier by the addition of strong loam taken from off the chalk or limestone rock, putting the whole firmly together, with mortar-rubble added, but no manure. Trees planted not too deeply in such a soil make short-jointed firm wood, which ripens thoroughly in most years. In the gardens at Belvoir there exists a Roman Apricot-tree which is planted against a west wall at a point where a pavement comes up close to the stem, and it is in perfect health. The tree was planted in 1857, and measures 30 feet in height by 24 feet in width, and it bears good crops of fruit. The subsoil at Belvoir consists of clay of great depth, and is, therefore, cold. I mention this because it shows under what apparently adverse conditions it is

possible to fruit the Apricot. It is always prudent in the case of wall-trees exhibiting great vigour when young to check this by lifting the roots either wholly or in part as soon as the leaves begin to fall. The consequences of neglecting to lift are unripened shoots, followed by gumming, and lastly by the dying-off of some of the branches. Apricot-trees of almost any size may be safely removed in the autumn if care be taken to preserve the greater proportion of the fibrous roots, and trees so treated frequently set an excellent crop of fruit the following spring. Having lifted and replanted a tree, it should be loosely fastened to the wall for about three weeks, so as to allow the tree to follow the settling of the border. In any case, water should be heavily applied during the act of filling in the soil, and immediately the job is completed.

Varieties.—Moorpark is the best flavoured variety, but it is also the most liable to disease; Hemskirk, Kaisha, Peach, and Shipley, are hardier, and may be recommended where the Moorpark is a failure. Breda and Roman are small-fruited varieties of good constitution, and useful for preserving and culinary purposes.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Anthurium Scherzerianum.—Those plants which have completed their growth for the year may now be removed from the stove to an intermediate-house for resting for six or seven weeks, but little water being afforded them. If scale infests them, let the foliage be thoroughly cleaned with a piece of sponge and Paraffin Emulsion or Richards' XL-All liquor. Do not leave this operation till growth commences, the young leaves being readily injured.

Anthurium Andreanum.—This variety is one of the most useful in the winter in affording spathes for cutting. The plants should be placed in a warm part of the stove, and liberally supplied with moisture at the root. If the plants are grown in 7-inch pots, they will be found effective when dotted about amongst other stove plants.

Petunias.—Cuttings, when well established in small pots before the winter, make useful flowering plants for conservatory decoration early next season. If cuttings are inserted forthwith, and left after rooting in the pots they were struck in, they will afford a supply of cuttings early in the spring. It is desirable to keep a few old plants to supplement these, as a reserve against loss of cuttings. Place them near the glass in a greenhouse, and afford water sparingly at the roots, damping off quickly if there is much moisture in the soil.

Fuchsias.—Plants that have been standing out-of-doors may be removed to a dry, cool shed, protecting them against frost. Fuchsias struck from cuttings some time ago in small pots should be placed in the same position as that advised for Petunias, where they will continue to grow steadily during the winter. Later-rooted plants may be placed in thumbs, and offered the same kind of treatment as the earlier-struck ones.

Cyclamens.—If early flowers are required let the most forward be selected from the stock of plants, and place them on a shelf close to the glass in a house with a temperature of 56° to 60°, admitting air in moderation day and night on every favourable occasion. The main batch of plants may be removed from the cold-frames in which they have been standing, to a light, airy house, and be afforded no artificial heat for some time to come, unless the air in the house becomes stagnant, when a little heat may be employed to restore it to wholesome conditions. Let water be carefully afforded, but do not cause suffering by an insufficient supply. Any plants which have filled their pots with roots may be supplied with a weak liquid-manure.

Small Decorative Trailing Plants.—A good batch of cuttings of *Opismenus* (*Panicum*) *Burmanni* variegata, *Tradescantia zebrina* and others, and *Selaginellas* in variety, should be inserted to the number of six in 3½ inch pots; the *Opismenus* and *Tradescantias* being placed under a handlight, or in a close case in a warm house; and the *Selaginellas* in a shady part of a moist intermediate-house, affording water and shade when necessary.

Shading.—All shading materials may now be put away for the season when in a thoroughly dry state, each being marked for the purpose of identification. The roofs, sides, and ends of all glasshouses should be thoroughly cleansed of dirt and conserve, so that the maximum of light may be admitted to the inmates.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 24	National Chrysanthemum Society's Floral and General Committees, Meeting.
TUESDAY,	Oct. 25	Royal Horticultural Society's Committees.

SALES.

MONDAY,	Oct. 24	Great Unreserved Clearance Sale of Nursery Stock, at Noble's Nurseries, Sunningdale, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Oct. 25	Dutch Bulbs at Protheroe & Morris' Rooms. Orchids at Protheroe & Morris' Rooms. Last day of eight days' Sale of Nursery stock at Noble's Nurseries, Sunningdale, by Protheroe & Morris.
WEDNESDAY,	Oct. 26	Dutch Bulbs at Protheroe & Morris' Rooms. Orchids at Protheroe & Morris' Rooms. Unreserved Clearance Sale of Nursery Stock and Stove and Greenhouse Plants, at the Avenue Nursery, Brondesbury Park, Willesden Lane, by order of Mrs. E. I. Goubert, by Protheroe & Morris.
THURSDAY,	Oct. 27	Dutch Bulbs, at Protheroe & Morris' Rooms. Unreserved Sale of the Established Orchids, at Earlham Hall, Norwich, by order of the Rev. Canon Ripley, by Protheroe & Morris. Twenty-fourth Great Annual Sale, at Hollamby's Nurseries, Groombridge, Tunbridge Wells, by Protheroe & Morris (2 days).
FRIDAY,	Oct. 28	Dutch Bulbs, at Protheroe & Morris' Rooms. Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—47° 3°.

ACTUAL TEMPERATURES:—

LONDON.—October 19 (6 P.M.): Max., 57°; Min., 51°.
PROVINCES.—October 19 (6 P.M.): Max., 56°, Scilly;
Min., 29°, central Ireland.

To the *Comptes Rendus* of the Académie des Sciences for June 20, MM. ALEXANDRE HÉBERT and G. TRUFFAUT contribute a paper on the Uses of Manures in Horticulture, in continuation of others already mentioned by us. They there record that:—Among the plants recently experimented upon, *Dracena Bruanti* is one of the species which yielded the most definite results. It was cultivated in pots four inches high, containing three hundred and thirty grammes of leaf-mould.

The trial began with cuttings ten to twelve inches long. Only a fraction of the subjects received the manures; the rest were reserved as check plants.

Preliminary analyses of these plants decided the experimenters to distribute to them, during the course of the trials, twenty-five grammes of a mixture of nitrate of potash, of chloride of ammonium, phosphate of ammonia, sulphate of magnesia and sulphate of iron.

The experiment lasted nine months (from March to November) during which time the plants were kept under glass and not repotted. The effect of the manure was distinctly visible very shortly after the commencement of the trials, and gradually increased. The plants treated were much stronger than the others, their stems more turgid, harder, more woody, their roots more developed. The market value of the test plants, which amounted to about the sum of 2 francs each, was estimated to be doubled for the plants which had received an

addition of manure. Statistics prepared by MM. HÉBERT and TRUFFAUT show further the percentage chemical composition of the check plants and of the *Dracenas* under treatment. With the latter, assimilation was doubled. All the substances contained in the manure were beneficial to the plant, except the sulphuric acid, which seems of least importance. It is also seen that plants having their food provided can assimilate a larger quantity of silica, alumina, lime, and soda, elements which are not furnished them in the form of manure, but which are contained in excess in garden soils and in water.

This experiment proves the increased production obtainable by a rational use of fertilising matters. Identical experiments made with numerous plants: *Adiantum*, *Begonia*, *Cocos*, *Ficus*, *Hortensia*, *Phoenix*, *Roses*, &c., yielded analogous results. Thus, according to MM. HÉBERT and TRUFFAUT, by employing manures judiciously, the horticultural trade may receive a fresh impetus, the sale of ornamental foliage plants and of flowers may become of increasing importance. In this way, at a trifling expense for manures, the prosperity of a national industry may be largely augmented. An abstract of this paper was given in the *Journal de la Société Nationale d'Horticulture de France* for August last.

THE PURPLE BEECH.—“Have you ever seen a finer Purple Beech than this?” said Miss SULLIVAN to the writer, on the occasion of a visit he paid to her delightful garden at Fulham one hot day in August last. Of course, it is not easy to remember statistical details relating to trees seen it may be years ago, and not inspected since, but there can be little doubt that this is one of the finest trees of the kind that we have ever seen. LOUDON, in his *Arboretum*, iv., p. 1979, mentions one at Enville, in Staffordshire, 70 feet high, with a head 85 feet in diameter; and one at Syon, Middlesex, 71 feet high; another at Muswell Hill, 62 feet; one at Claremont, 50 feet, and many more. But it is not the size that gives the charm to these trees—that is only one element. Their dense habit, feathering gracefully to the ground, the richness of their colouring, and the agreeable shade they give, all impress the spectator. Let him place himself beneath the tree, and look up at the frame-work (fig. 89, p. 305), the interlacing branches, and the dense canopy over all, and he will, if he have eyes to see, leave well nigh awe-struck at the thought that all this mighty mass is the product of water and air in conjunction with light and heat—the soil goes for so little except as a water-furnisher. Here, for instance, is a noble Beech, growing on alluvial soil and valley-gravel, as different a soil condition as can well be imagined from the dry, chalky downs whereon the Beech flourishes generally. Miss SULLIVAN'S garden, by the Thames side, comprises not only points of great beauty, and still greater interest, but a degree of variety most charming to experience, and the more remarkable as the garden is now unfortunately well within the zone of London smoke and fogs. We may have an opportunity of speaking later on of this wonderful garden in more detail.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, October 25, from 1 to 4 P.M., in the Drill Hall, James Street, Westminster. A lecture on “Experimental Horticulture” will be given by Mr. GEO. GORDON, V.M.H., at 3 o'clock.

ST. PETERSBURG.—The great International Horticultural Exhibition to celebrate the fortieth anniversary of the foundation of the Imperial Horticultural Society, will be held in the Taurida Palace, St. Petersburg, from the 5/17 to 15/27 May next. Professor FISCHER DE WALDHEIM is the President of the foreign section, and Mr. W. ENDER the Secretary.

HORTICULTURAL CLUB.—The first dinner and *conversazione* for the session 1898-99 took place at the Windsor Hotel, Victoria Street, Westminster, on Tuesday, the 11th inst., the chair being taken by Mr. PHILIP CROWLEY, and there were also present Messrs. G. Munro, J. H. Veitch, Peter Kay, W. Bassett, J. Walker, P. Veitch, J. Asbee, C. Mason, and the Secretary. A paper was read of Mr. George Bunyard's, who, owing to indisposition, was himself unable to attend. The subject of it was the Fruit-crop of 1898 and its lessons. It was very ably treated, and led to a very interesting discussion, in which most of those present took a part.

DIOON EDULE.—The Curator of the Botanic Gardens, Cambridge, is desirous of offering fresh pollen of this plant to any one who may chance to possess a female cone.

THE NORTH PECKHAM AMATEUR CHRYSANTHEMUM SOCIETY.—We are pleased to find, from a communication we have received from Mr. W. NICHOLS, the prize-fund secretary, that this energetic suburban Society is moving ahead, and making every effort to keep in the front rank. We note that one hundred pounds' worth of prizes, consisting of watches, clocks, vases, cruets, medals, &c., are on view this week at Messrs. SEALE & SON'S, Rye Lane, Peckham. Many of the members of the Society are found in the ranks of the printing and publishing trades residing in Peckham. The Society does not, however, content itself with the local exhibitors and cultivators, but by means of open classes endeavours to secure others living within a ten-miles radius. The President of the Society is GEO. PEABODY GOOCH, Esq., 8, Porchester Gate.

RAINFALL RECORD IN INDIA.—The British farmer principally, and almost everywhere in these islands, as well as those persons who are dependent on wells for their water-supply, including our dwellers in the East End, who draw what they can from the water-main, must have read, with a recurrence of thirst, the statistics published the other day connected with the rainfall for the past year in one of our Indian possessions. The rainfall at home, as recorded in our weekly weather table, has been the lowest for years—the sun the brightest and warmest, whilst another part of our empire has had more than its usual large allowance of rain. The southern slopes of the Himalayas receive the largest measured rainfall in the world, and pour it down to the Indian rivers. Cherrapunje, where the monsoon first strikes the hills in Assam, gets no less than 489 inches of rain. According to returns for the past twenty-five years, the year is keeping up its reputation. Letters of September 4 report that 76 inches had fallen in five days, and that the total fall up to date was nearly 400 inches. Even this amount was greatly exceeded in one memorable year, viz., 1861—the record was actually 805 inches, of which 366 inches fell in the month of July.

THE CURRANT CROP OF GREECE.—Atmospheric conditions interfered this year before and after placing the Currants on the market; on the average, the quality would appear to be very good. It would have been an exceptional crop, but the rains during drying time interfered deleteriously. From the point of view of profit to the grower and exporter, the crop is a failure. The estimated yield being about 5 to 10 per cent. in excess of the ordinary output—120,000 tons—depressed the average price of 22s. duty paid last year to 17s. this season, or a fall of 5s. To this have to be added adverse rates of exchange, cost of travelling, and depressed markets, bringing out the return at 25 per cent. less than in 1897. Besides the increased product this year, earlier shipments (by fifteen days) have contributed to reduce the price, because the consignments commenced to arrive in England sooner than the buyers were ready for them.

FLOWERS IN SEASON.—We have lately received from Mr. T. S. WARE, numerous flowers of the newer varieties of single and double tuberous-rooted *Begonias*



FIG. 89.—PURPLE BEECH IN MISS SULLIVAN'S GARDEN, BROOM HOUSE, FULHAM.

(SEE P. 304.)

in bewildering shades of colour and form. As substitutes for zonal and other Pelargoniums in vases, pots, and beds, nothing finer can be conceived at this late part of the year, for whereas in most inland gardens the Pelargonium is either entirely, or partly, out of flower, Begonias are almost as good and floriferous as ever, and yet we are exceeding loth to part with our zonals.

PLANTS REQUIRE A CHANGE.—Professor BEAL, who has had the management of the Botanic Garden, Michigan, for many years, tells us that he finds that there is no such thing as planting once for all time. There is no such thing as stability, for plants need a change sooner or later, and will have it or perish. The longer a plant remains in one place in quantity, the more likely is it to be disturbed by enemies—animal or vegetable, big or little.

BOTRYCHIUM LUNARIA.—We should not have expected to find this plant on a dry hot sand-bank, nevertheless we did meet with it on the slopes of the lateral moraine bounding the Findelen glacier, and where scarcely anything else was growing, and where the soil was so comminuted as to be reduced to sand, and so hot as to induce us to remove our hands quickly.

COMING CHRYSANTHEMUM EXHIBITION AND CONFERENCE AT LILLE.—The Chrysanthemum is making rapid strides as an exhibition flower in France. We have received an enormous but artistically coloured poster, advertising the coming International Exhibition and Conference at Lille, under the auspices of several of the most important French horticultural societies. The poster includes representations of several types of Chrysanthemum blooms, and of the Palais Rameau, in which the exhibition will be held. The Chrysanthemum's connection with the East is indicated by a Japanese lady, surrounded by specimens of the flower. It is a very effective poster, and free from any vulgarity. The exhibition will extend from November 10 to 15, and the conference will take place on November 10. A prize of 500 francs and a Gold Medal has been offered for competition by the Minister of Agriculture, on behalf of the French Government.

THE CHRYSANTHEMUM SOCIETY AND THE ROYAL AQUARIUM.—The sub-committee appointed by the National Chrysanthemum Society to consider what suitable place could be found in which to hold the annual exhibitions presented its report, as we are informed, to a special meeting of the executive on Monday evening last. Excepting the secretary to the society, Mr. BALLANTINE was the only member of the sub-committee that voted in favour of remaining at the Aquarium; Messrs. BEVAN, CRANE, MOORMAN, SIMPSON, TAYLOR, and WATERER, favouring the Crystal Palace. It is said that the Crystal Palace authorities were prepared to make a financial grant to the society equal to that which it has enjoyed from the Royal Aquarium Company. The next to unanimous recommendation of the sub-committee was, we learn, rejected.

PUBLICATIONS RECEIVED.—*Report on Flax Culture for Seed and Fibre in Europe and America.* By Charles R. Dodge (Washington). — *Botanical Gazette* (Chicago), September, 1898, contains articles on Origin of Gymnosperms and the Seed Habit, John M. Coulter; Regeneration as exhibited by Mosses, Fred. de Forest Heald; Southern Maidenhair Fern in South Dakota; Bacterial Content of Hailstones; and other subjects.

PLANT PORTRAITS.

ACALYPHA HISPIDA (Burman) = *Sanderi* hort., *Revue Horticole*, October 1, tab. col.

CALICOMA SERRATIFOLIA, *Revue de l'Horticulture Belge*, September. Saxifragaceae, greenhouse shrub, with lanceolate dentate leaves and globular flower-heads in clusters; flowers, yellowish.

CAMELIA DONKELAARII and **C. SASANQUA**, *Garden*, September 24.

CATALPA HYBRIDA.—A hybrid between *C. ovata* and *C. bignonioides*, *Garten Flora*, t. 1454.

PEAR "ANVERSOISE."—A seedling from Marie Louise; fruit medium-sized, turbinate, oblique at the base; skin, brown; flesh, white, juicy and of agreeable flavour. *Bulletin d'Arloriculture*, &c., August.

VIENNA.

THE PUBLIC GARDENS AT VIENNA.—The Gardens of the Town Council at Vienna are a credit to the city, and contain a great collection of new and rare spring-flowering shrubs, many of the latest introduction. Their display in May or June is unique. I have visited these gardens on various occasions during many years, but they have improved remarkably during the capable management of Mr. W. Hybler, head-gardener to the Town Council of Vienna. I will confine my attention to the largest of the public gardens—the Stadtpark. It is situated just outside the old city, is of no very considerable extent, but contains the largest collection of ornamental and flowering shrubs in Vienna. It was laid out in 1868 by the late Stadtgärtner, Dr. F. Siebeck. To go into full details of every feature would require much space; it is only possible to notice a few of them. Immediately on entering the park from the Park Ring, a fine avenue of Planes, Ailanthus, Elms, &c., the first thing to attract attention is the Kursalon, a refreshment-pavilion, a large and very handsome building. It is situated on slightly rising ground, surrounded on either side by fine groups of trees, with a flower-garden in front. The building has a very imposing appearance. The view from the terrace across the wide and open lawn to the lake and its surroundings is very picturesque.

I should, however, especially like to draw attention to the bedding in front of the pavilion. The flower-garden is in two divisions, the beds representing two spirals, which spread as a fanciful border of varying width, with clipped Box-edgings, over the space covered by the garden, and are filled with plants of neat habit: Pelargoniums, Silver Star Begonia, Chilean Beet Königin, Torenia Fournieri, Begonia splendens, Acalypha, Ageratum, and other showy and effective species.

Cannas are used freely in this parterre: they are planted out in the border; each plant has plenty of room to develop and display its beauties. For excellence, the following varieties may be mentioned:—Königin Charlotte, Stadtgärtner Sennholz, Col. Boiesau, and Franz Buchner. In addition, there is a large circular bed; in the centre, on each side, it is planted with Cannas, rather old, small-flowering varieties, with large foliage; in the middle is a fine plant of *Chamaeris excelsa*, surrounded with *Phalaris arundinacea variegata* and *Perilla nankinensis*, which produce a striking effect. A good use was made of *Canna Kaiser Wilhelm*, edged with *Centaurea candidissima*. In front of the parterre we noticed a well-kept carpet-bed, representing the arms of Austria, with the monogram of the Emperor, F. J. I., and on either side the dates 1848–1898.

In the pleasure-grounds may be seen some good specimens of flowering shrubs and trees—*Kolreuteria paniculata*, *Eleagnus rhamnoides*, with, on either side, fine trees of *Acer dasycarpum*, *Laburnum*, *Amorpha*, and *Deutzia*, *Prunus*, *Berberis*, and *Spiræas* in variety.

Leaving the parterre, and entering the principal walks, the flower-beds on each side are most pleasing. On the right we find a large group of tropical plants, *Caladiums* mixed with *Hedychium*, Cannas with large foliage, and fine plants of *Musa*.

In the pleasure-grounds may be noticed some good specimens of spring-flowering shrubs—*Deutzia*, *Desmodium*, *Cornus*, *Calycanthus*, *Fontanesia*, *Prunus* and *Staphylea*. A circular carpet-bed, planted with *Alternanthera amona*, *A. aurea*, *Echeveria secunda*, *Lobelia*, and *Pachyphytum* made a good contrast to the others. There are also noticeable free, fine specimens of *Catalpa bignonioides* and *Magnolia cuspidata*, which bloom in great beauty every spring; *Crataegus Crus-galli*, with double pink flowers, *Sophora japonica*, Planes, and many others. Let us extend our walk through the fine Horse-chestnut walk to the lake. The ground is pleasantly undulating; the turf in excellent condition, being regularly mown and swept. Many trees and shrubs are labelled, and students spend much time in this garden studying botany. Still passing on, we come to a bush of *Corylus Avellana asplenifolia*, reminding us very much of *Asplenium furcatum*; single and

double-flowered *Prunus cerasus*, *Eleagnus argentea*, *Spiræas* in variety, and other well-known ornamental shrubs. They do not thrive so well as in England. Exotic conifers especially are in a very poor state, and all suffer more or less from the severe Austrian winters. Many of our soft-wooded and evergreen shrubs are grown in pots only.

The lake is fringed with varieties of Willows, *Poplars*, *Lonicera Alberti*, Beech, and Birch-trees; *Amygdalus*, *Caragana*, *Phormium tenax*, *Gynierium*, *Arundo*, *Iris*, and Bamboos; they all add to the beauty of the whole. The lake is also interesting for its various water-fowl. Leaving the lake behind us, and following the path, after a short walk we reach the Selenko monument to the late Lord Mayor of Vienna. From here we get a glorious view across wide and open lawns to the pavilion, and the flower-beds on each side.

We return to the pavilion, passing a fine tree of *Pterocarya fraxinifolia* 50 feet high. On the lawns are planted clumps of from ten to twenty of our best-known hardy evergreen shrubs and trees; also other hardy plants are planted out singly, each plant having room to display its own peculiar beauty: the effect is very artistic and satisfactory. The many flowering shrubs and trees make a grand display during the summer-time; the gardens, in fact, are exceedingly picturesque, and well worthy of a visit. *Ch. Schneider, Swanley.*

BOUQUETS.

THESE creations are almost as much regulated by fashion as are the bonnets of the ladies. It is repellent to the mind of men of science and intelligence to admit the existence of such a thing as chance or caprice. These words are simply expressions denoting our ignorance. And we are in ignorance of the laws that dictate the presence of ribbons, sashes, or stuffed birds in a bouquet. We simply note them for the guidance of those unfortunate beings who are obliged to follow the dictates of fashion, and shall heartily sympathise with them when the taste changes.

At one time we looked to France to furnish illustrations of taste, elegance, and appropriateness in bouquet work, but in our opinion the French have gone behind the Germans in this matter of late years. The French have the colour sense best developed, and although they now deck their bouquets and flower-pieces with monstrosities in the way of ribbons, the colour is usually well adjusted to that of the flowers. Anyone who has tried to group *Cattleyas* will acknowledge the difficulty of getting suitable tints of ribbon, or indeed, of getting other flowers which "will go with them."

For our illustrations of some fashionable bouquets of the day (figs. 90, 91), we are indebted to Messrs B. S. Williams & Sons, Court florists, of Piccadilly, and of the Victoria Nurseries, Upper Holloway. The large resources at their disposal, and the taste of their artists, place them in the first rank as decorative florists.

NOTICES OF BOOKS.

ELIZABETH AND HER GERMAN GARDEN.
(Macmillan & Co., London.)

That "Elizabeth" is very fond of her garden there is no doubt; it is also to be noted how freely her pen runs on when speaking of its charms. She gives us no set picture of her "paradise," but rather a series of "snap shots" of it which we may piece together to glean an idea of it as a whole. She writes:—"I love the Dandelions and Daisies even more passionately now. . . . The Dandelions carpeted the three lawns—they used to be lawns, but have long since blossomed out into meadows filled with every sort of pretty weed—and under and among the groups of leafless Oaks and Beeches were blue Hepaticas, white Anemones, Violets, and Celandines in sheets. The Celandines in particular delighted me with their clean happy brightness, so beautifully trim and newly varnished, as though they

too had had the painters at work on them. Then, when the Anemones went, came a few stray Periwinkles and Solomon's Seal, and all the bird Cherries blossomed in a burst. And then, before I had a little got used to the joy of their flowers against the sky, came the Lilacs, masses and masses of them, in clumps on the grass, with other shrubs and trees by the side of walks, and one great continuous bank of them half a mile long, right past the west front of the house, away down as far as one could see, shining glorious against a background of Firs. When that

amuse *dilettante* readers for half an hour now and then. There are no illustrations.

THE MAKING OF A DAISY: *Wheat out of Lilies, and other Studies in Plant Life and Evolution. A popular Introduction to Botany.* By Eleanor Hughes-Gibbs. With illustrations. (Charles Griffin & Co., Exeter Street, Strand.)

There is assuredly no lack now-a-days of elementary books on botany; the only doubt is whether

illustrations to this book are not very numerous, nor especially remarkable. But it is a difficult task to deal with subjects so often treated of, and on the whole the author of *The Making of a Daisy* may be congratulated on having written in a style which is sure to find some admirers, and on having put together facts, true in themselves, and correctly chronicled.

HOME CORRESPONDENCE.

CROCOSMIA.—How many of us have tried *Crococsmia aurea* and its varieties *C. imperialis* and *C. maculata* in a bog-bed? I find that in wet peat, in company with *Parnassia palustris*, *Saxifraga hirculus*, and *Epipactis palustris*, they flower well, and the leaves do not go prematurely brown. I have been told by those who have seen them in their home in South Africa, that they flower admirably under the shelter of dripping rocks. *C. Wolley Dod, Edge Hall, Malpas.*

CHRYSANTHEMUM DISEASE.—My information points to the spread of the rust disease in the Isle of Thanet and East Kent. Every gardener should be careful whence he obtains cuttings and plants, otherwise he may quite unwittingly introduce the rust into his collection. I am told that, to a great extent, Chrysanthemum growers are themselves to blame for the epidemic character the disease has assumed, and I believe it is so; but we must go further afield in combating this malady than in taking care of our own plants. By taking timely measures against its spread, each in his own garden, much may be done, if not to extirpate it, yet to keep it within moderate bounds. *H. Markham, Northdown, Margate.*

BLUE FLOWERS.—In my note on autumnal blue flowers in last week's *Gardeners' Chronicle*, I omitted to name *Lobelia syphilitica*, which for the last fortnight has been very charming in the bog-bed, with its spikes of porcelain-blue flowers. *R. Milne-Redhead.*

SHRUBS WITH BEAUTIFUL LEAF-TINTS.—Amongst shrubs, what can excel, or even rival, *Parrotia persica*, which has now in its leaves every shade of green, from a pale, almost yellowish tint, to dark olive; and of reds, from yellow to scarlet and crimson; and frequently all these shades in the same leaf! *Prunus Pissardi* has been very handsome this autumn, compensating by its present vivid colouring for the unobtrusive character of its summer growths. *R. Milne-Redhead.*

MULTIPLE PARENTAGE.—The fact that a considerable number of abnormal forms have been added to our already extensive list of Ferns by crossing diverse varieties, and that some of the plants so produced have shown the characters of several varieties conjoined, has led to the idea that such combinations are due to the simultaneous fertilisation of one archegonium by several antherozoids derived from different prothalli, the various potencies then evidencing themselves by their several characteristics in the one plant resulting from the presumed multiple conjunction. There are, however, grave reasons for believing this theory to be untenable. That combined variations may be obtained by cross-fertilisation has now been amply demonstrated, so far as two distinct varieties are concerned. The first and most striking instance was in Mr. E. J. Lowe's hybrid between a cruciate form of *Polystichum angulare* and a dense form of *P. aculeatum*, a cruciate *aculeatum* resulting. Since then equally conclusive crosses have been obtained; *A. f.-f. Victoriae*, for instance, crossed with the bristly variety known as *A. f.-f. setigerum* has yielded a perfectly typical percruciate *Victoriae*, with the bristly character of the other. These, however, only demonstrate dual parentage, which falls entirely within the recognised lines of reproductive biology. In the cases, however, which we have in view, principally forms of *Scolopendrium vulgare*, we have, for instance, allied in one plant *S. v. crispum*, *S. v. cristatum*, and *S. v. muricatum*, or *rugosum*, that is, frilled, crested; and roughly-surfaced forms, the result being a muricate or rugose crested *crispum*. The three characters, or it may be more, are undoubtedly there. The question, therefore, is, whether the triple or quadruple combination is the result of one cross or more. In the first place, as evidence for plurality of crosses, it cannot be ignored that the plants have been raised amid a multitude of already crossed, and, therefore, variable plants, and no one who has raised



FIG. 90.—A FEATHERWEIGHT SHOWER-BOUQUET. (SEE P. 306.)

ine came, and when, before it was over, the Acacias all blossomed too, and four great clumps of pale silvery-pink Peonies flowered under the south windows, I felt so absolutely happy, and blest, and thankful, and grateful, that I really cannot describe it. My days seem to melt away in a dream of pink and purple peace." This is a fair specimen of the style of the book in such parts of it as deal with the delights of flowers; other portions, wherein such characters as the Man of Wrath, the babies, Trais and Minora are introduced, have still less to do with the garden or with horticulture, and are rather annoying than otherwise, having a tiresome assumption of wittiness and smartness. The book may

such "popular" works are capable of imparting any information, or of interesting readers in the subjects with which they deal. As regards the volume before us, there is no doubting the excellent intentions of the writer, nor her sincerity, but her rhapsodies about "dear Mother Nature" blend oddly with an attempt to explain evolution and the "making" of plants; subjects on which she owns herself that she has "little that is really new to offer." With the desire to become familiar with Nature, every appreciative person must sympathise, and every intelligent one now knows that evolution is not contrary to or "really opposed to creation," so that fresh assurance on the point seems somewhat unnecessary. The

Ferns from spores can exclude from his mind the ever-present possibility of stray spores intervening to mar the integrity of a sowing. Given the most careful collection and subsequent protection by glass, spores, when ripe, fly broadcast in all directions, and hence a gathered frond is almost sure to bear upon its surface not merely its own spores, but alien ones shed by its neighbours. Given, then, the spores of two combinations, there is, of course, the possibility of another cross, combining the special characters of four plants, and crossing these multiple combinations again, either purposely, by selection, or accidentally by means of strays, we arrive at such a composite state of matters as may yield almost anything. Even with the utmost care, a continuous course of crossing the same species within the same area would have such results as are in question, i.e., a number of plants presenting all sorts of characters in combination in various degrees. This diversity would furthermore be increased by the chance of original sports occurring again and again from spores derived from already varied and crossed parents. We, therefore, see that the difficulty of establishing multiple parentage as indubitably the cause of multiform progeny is extremely great in any case, the determination of the actual parents being almost impossible. The main and fundamental objection to the acceptance of the theory is, however, outside this particular cultural difficulty, and is purely a biological one. The act of fertilisation, although effected upon a microscopic scale, is thoroughly systematic and orderly, and not due to a haphazard admixture of diverse elements. In the first place, prior to fertilisation, the egg or mother-cell prepares for it by throwing off one half of its nucleus, a highly complex body in which are seated all the potencies of the mother plant. This rejected half is the province of the sperm or fertilising-cell to replace, and this it does to a nicety, its own nucleus being already a half one, containing in itself all the potencies of the paternal plants. These two halves then join together and form a complete and perfect nucleus, completing and perfecting the previously imperfect mother cell, and rendering it capable of proceeding with its destined work of dividing and redividing, and building up the future plants. It will be seen that this orderly method of procedure and especially the previous throwing off of half of the nucleus to make room for the coming moiety, pre-supposes the impracticability of accommodating anything more than it has made room for, and in fact when the phenomenon is carefully watched, as it has been, it is seen that the nature of the subsequent combination and development of the two is such that a third intrusive nucleus, or even a fourth, as the theory of multiple parentage demands, would be absolutely *de trop*, and in vulgar parlance "wouldn't work." The cell, indeed, may be compared to a pill box with its lid; we may bring a dozen lids to the box, but if one is on, the box is complete and there is an end of the matter. Viewed, therefore, in the light of the above facts, we are driven to regard multiple parentage as impossible, and to impute the multiform results obtained by the sowing of mixed spores to successive crosses or independent variation, due to the instability of previously varied forms. *Chas. T. Druery, F.L.S., V.M.H.*

PASSIFLORA EDULIS.—There has been a good deal said and written about *Passiflora edulis* lately, which induced me, about two years ago, to try what I could do with a plant of it planted on the back wall of a young viney. During 1897 the plant did nothing but grow, produced a few flowers, but set no fruit. During the spring of this year, some heat was applied for the benefit of the young Vines, and also for the benefit of some Peach-trees, which I also have planted so as to economise the space and light of the viney until the young Vines covered the roof. The *Passiflora* shoots were trained over the path, from which long, pendent shoots were allowed to drop; these flowered profusely, and set liberally: there are now 650 fruits hanging on those shoots, which is certainly a picture, representing both beauty and abundance. I may mention that whilst the house was kept warm and close for the sake of the young Vines and Peach-trees, the *Passiflora*, although it flowered freely, only set one or two fruits. When, however, the house was kept at a cooler temperature, with the top-light let down about a couple of feet, the fruit set freely. As probably my variety may not be the true one [it is], I am sending a couple of green-fruit for your inspection. Later on I will send some of the ripe. The back wall of this same house has been since 1866 densely covered with *Monstera deliciosa*, producing every year its curious fruit in great abundance. Although the

fruit is of excellent flavour, it is worthless for dessert, for no sooner is a small mouthful swallowed, than an irritation is produced in the throat, which compels one to leave off, and say rather nasty things of the *Monstera*. [The proper way to eat it, is to thrust a quill through the rind where are the crystals which produce the irritation into the pulp, which is free from the "needles" and suck the juice. *Ed.*] A good space of the wall we cleared of the *Monstera* to make room for the *Passiflora*, and also for a variety of Sweet-Orange. As I have noticed the introduction of some Peach-trees into this house, I may mention that they produced satisfactory results in 1897. It was during the early spring of that year they were planted, and again most satisfactory this season. I should like to try them even another year, provided the young Vines do not monopolise the whole of the roof of the house to their hurt. Altogether, this has been a most interesting house. *W. M.*

LOBELIA RIVOIREI.—I have seen with much pleasure the note and illustration in the *Gardeners' Chronicle* for September 24, 1898, p. 233, of *Lobelia Rivoirei*—to be more exact, *Lobelia Gerardi Rivoirei*. The entire series of *Gerardi Lobelias* was obtained by myself by hybridising, in the Lyons Botanic Garden, at the Tête d'Or Park; and in addition to *L. G. Rivoirei* there are others also very interesting—*L. G. corallina* and *L. G. lugdunensis*, among others. Since the acquisition of *L. G. Rivoirei*, which marked a starting point for a new race, the latter yielded last year *L. G. Rivoirei roseo-ardens*, with bright rose flowers, and this year the most beautiful of all. This new variety, which we call *Lobelia Gerardi triumphans*, is a cross from *Lobelia G. Rivoirei* the type \times *L. G. corallina*. The habit and foliage of it are entirely those of the type, but it is distinguished from it in having larger flowers, and of a brilliant red, not inferior to that of *L. cardinalis* Queen Victoria. This acquisition will prove a very successful one. The whole series has been dedicated to Professor R. Gérard, Director of the Botanical and Horticultural Collections at the Tête d'Or Park, Lyons. *G. Chabanne, Secretary of the Société d'Horticulture du Rhone at the Tête d'Or Park, Lyon.*

FRUITS: RETROGRESSION.—In Pears we seem rather going backward; and it is time also we had plain speaking or writing on the decline of Pineapple culture. What would James Barnes of Bicton have said to the beggarly spread of Pineapples at the great fruit show at the Palace? Fine Melons, mostly novel, do not constitute a great advance. One might safely assume, without seeing or tasting one of these new Melons, that not one of them surpassed the Hero of Lockinge. Our great fruit-growers should either give up showing hardy berries or other fruits, such as Cherries, or stage them of such quality and in such quantities as were common enough forty years ago. Then, on most north walls pecks of Morellos or other late Cherries could be found through September or October; and autumn-bearing Raspberries and Strawberries were plentiful as Blackberries should be. Now we have at this great show one dish of Blackberries, two of Cherries, two of Gooseberries, two of Currants, two of Raspberries, and two of Strawberries (one of Royal Sovereign and one of St. Joseph); while our factories are loudly calling out for Blackberries for jam and port-wine [!] and the cry is heard in various directions for Strawberries all the year round—and they will come before long. *North Briton.*

AMERICAN AND BRITISH APPLES.—Sometime since, passing one of our Kingston market stalls, I was interested in the appearance of the fruits in a partially used barrel of Apples, a fine even well-coloured sample, evidently King of Tomkins County. These were undoubtedly early in the market, and their presence serves to show that American growers are alive as to the condition of our Apple supply. Some home-growers perhaps may complain that these foreigners should come in as they do free of duty to compete with their stocks, as it hinders them from obtaining fancy prices, but that is not the opinion of the consuming million, or even of the dealers. As it is, good home-grown Apples are selling at from 2½d. to 3d. per lb. retail, which means from 10s. to 12s. per bushel; there seems little room for complaint as to home returns, provided the grower gets a relative price wholesale. But what chiefly attracted my attention in relation to these American Apples was their soundness, for whilst there were from two to three bushels in the barrel when full, yet every fruit seemed after travelling several thousand miles to be as sound as well could be. Could we possibly pack home-grown Apples of good size and well matured in

the same way and in the end after long journeys show the same minimum of injury? Are not the Americans so dry-fleshed that they bear hard equal compression such as they get in the barrels, because so equally sized and so firmly packed, without any packing material. Our Apples do not attain to that dry-fleshed condition, they are more juicy, and having such comparative moist flesh, not only endure compression badly, but very soon begin to decay in the form of a wet rot which soon spreads all over the fruit. In the American varieties any decay caused by improper packing, or undue compression seem to be limited for some time at least, to the portion originally injured, hence there is with them less of waste. If ever a season approached to the condition of an average American summer, surely it has been the past one, yet our Apples seem to be of the same juicy texture as is usually found. Thus it would seem as if seasons with us did not change the fruit's nature. Probably it is the same throughout Europe. On the very same day that I saw these American Apples, I also saw set upon a board a quantity of large green Lord Derby Apples. It was, however, most distressing to see that they were covered with bruises, very recently given, but too evidently the product of that utter "don't careness," the great curse of our home fruit-growers in handling and sending to market. These had in appearance alone lost fully fifty per cent of value by the rough treatment given them. *A. D.*

THREE GOOD ANNUALS.—Among the numerous varieties of new annuals that have come under my notice, there are three excellent ones. *Godetia gloriosa* is a charming variety, and one of the best yet introduced to the public, being most brilliant in colour. It is very free-flowering, has a compact habit, and attains the height of 12 to 14 inches. The flowers are rich magenta-crimson in colour. If sown during April in masses on the borders of shrubberies, or walks in the pleasure grounds, it will present a very bright and attractive display of flowers during the summer months. Marigold: "Legion of Honour."—Unlike most other varieties of Marigolds, this has a neat and dwarf habit of growth. It flowers abundantly, and the blooms are bright golden yellow in colour with a dark crimson centre. Its height rarely exceeds 9 inches. Candytuft: "White Spiral," produces spikes of pure white flowers, quite 6 inches in length. If sown towards the end of March, it will give a display of snowy-white flowers from June to September. *E. Beckett, Aldenham House Gardens, Elstree.*

BRITISH WOODS.—We are so apt to think of Scotland as much wilder and more wooded than England, that it will surprise many to hear that out of 2,594,273 acres, 1,602,507 acres of woodland are in South Britain, and in Scotland only 823,809 acres. In Wales 167,957 acres are woodland. The most wooded county of England is Sussex, then comes Hampshire, but as Hampshire contains the famous New Forest, the Sussex area is extremely remarkable. It is noteworthy that both these counties have been great forest areas from prehistoric times. We know that when the Normans invaded Britain, great woods stretched from Pevensy in the south-east of Sussex to near Bath, and that these woods were existing in great part as recently as the reign of Charles II., when charcoal-burners in Sussex woods were very numerous. *Percy Collins, Netherby, Longtown.*

THE STRAWBERRY-RASPBERRY.—I have now seen and tasted the fruit of *Rubus palmatus*, the so-called Strawberry-Raspberry. It is in form like a small Strawberry, with pointed extremity. In taste it resembles a poor flavourless Raspberry. It is, therefore, I think, quite worthless save as an ornamental plant, as its flowers are comparatively large, and of a pure white. It might, I think, be called the Strawberry-Bramble. *W. E. Gumbleton.*

CHAMÆROPS EXCELSA FLOWERING OUTDOORS.—Passing along the principal garden-portion of Hyde Park, the flower-beds by Park Lane, the other day, I noticed the large Palms and foliage plants that are annually plunged to impart a tropical effect, were being taken up for the purpose of housing them. Among them I remarked that a very fine tall specimen of the above-named Palm was in flower, the plant being 9 to 10 feet in height, with plenty of healthy foliage, and nearly at the top, between the leaf-stem, two flower-spikes were showing opposite each other, each spike carried several heads of bloom, something in shape and size to a head of bloom of *Hydrangea paniculata*. The flower-spikes measured about 18 inches in length, the branches about 6 inches long, the colour was pale yellow. This is the first occasion that I have noticed this species of Palm in flower outdoors. *C. A. B. Bromfield. [Not uncommon. Ed.]*

SOME NEW APPLES.—It was certainly an odd circumstance that the Fruit Committee should at a recent Drill Hall meeting have granted Awards of Merit to one of the largest, as well as to one of the smallest, Apples yet placed before them. The large one—Invincible—a broad, conical-shaped fruit, something after Alfriston, but more ribbed and coloured, and devoid of the russet which always characterises that variety, if it turns out to be really a distinct one, and quite new, as it apparently is, should make one of our finest kitchen varieties. It is especially the solid build which market-men so much like, and devoid of those depressions which characterise some other fruits so undesirably. The smaller one should in time become very popular on the dessert-table. It is flattish-round in shape, quite handsome, of small size, and has flesh of a solid brisk juicy nature, and of yellow colour. This it inherits from its transcendent Crab-parent, which was the seed-producer, and with

by doubling, is a matter of opinion; it is certainly more showy, and will be very useful for many purposes. From the description given of Mr. Angus' flowers, mine appear to be the same in form, but I expect further advancement another season. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

THE FATE OF WIMBLEDON - HOUSE AND GROUNDS.—I note the comments on the above place in the *Gardeners' Chronicle*, p. 224, September 17, 1898, and am sorry to say those remarks are too true, as I leave here on October 20, after twenty-four years' service, to make room for the builders who will cut up the property, so that the gardens which were extolled by Loudon in his *Suburban Gardener*, and which have been the pride of the neighbourhood for years, will be things of the past. The late Sir Henry W. Peek, Bart., expended over £30,000 in rebuilding the glasshouses and offices, and in improving the

A "COTTAGE-LOAF" TOMATO.

EVERY cultivator of Tomatoes has had occasion to observe at one time or another what curious shapes the fruits sometimes assume. This was especially the case when the large-fruited varieties of the Trophy type were more commonly grown. The "Perfection" type, that produces smaller, smooth-skinned fruits usually "sets" more freely, and less frequently produces monstrous fruits. Monstrosities are generally the result of imperfect fertilisation of the flowers; the union of two flowers at a very early stage; or of abnormal flowers that occur owing to the unnatural and over-fed conditions the plants are grown under. It is only when these irregular fruits assume grotesque shapes, or mimic the form of everyday articles, that they call for special remark. The photograph from which fig. 92 has been prepared, was submitted to us by Mr. J. D. Mason, of Streatham, who aptly described it as a cottage-loaf Tomato. The plant which produced the fruit was grown in the open air.

The particular form of the fruit in this case is due to the formation of a second or supernumerary row of carpels above the first.

A NEW PROFITABLE CANADIAN INDUSTRY.

THE GINSENG.—There is a plant that grows in many parts of Ontario and Quebec which for some time has been an article of export, but now has become very scarce, and is nigh to extermination, because the natural increase is not able to maintain a supply equal to the demand, especially as no effort was made to leave under-sized plants to produce seed. In 1891 the Ontario Legislature prohibited the digging of it from January to September, with the object of preventing its destruction; but so long as greedy hunters would dig up the plants regardless of size, the open season is sufficient to accomplish sooner or later its extermination. The export from Ontario and Quebec ten years ago was estimated to be worth 100,000 dollars; it is now so small that it cannot be found in the exports of the last fiscal year, but occurs among names of other roots imported. The plant referred to is the Ginseng (*Panax quinquefolium*, L.).

It has been successfully cultivated in the United States, and inasmuch as it is also at home in our forests, and can be just as easily grown here, therefore this article is written, both to call attention to the subject and to give the latest information in the possession of the writer concerning the method of cultivation and preparation for market, as well as its market value and the probable profitable demand. The writer is indebted for much of the information and for the illustrations which elucidate it, to a paper on the cultivation of the American Ginseng by Prof. George C. Butz, published by the Department of Agriculture of Pennsylvania.

There is also a special incentive that appeals to the enterprising Canadian to induce him to give some consideration to this matter, in the fact that Ginseng grown in our climate is of better quality, and therefore commands a higher price than that grown to the south of us. J. L. Cilley, a New York exporter, issued a circular last August in which he offered to pay for Canadian, Vermont, New York and Northern Pennsylvania Ginseng \$3 to \$3 20 per pound; for that of Southern Penna, Northern Ohio, Northern Indiana, Michigan and Western Illinois, \$2.90 to \$3.00: a difference in our favour of twenty cents per pound.

The cultivation of Ginseng begins with the gathering and planting of the seeds which are contained in the berry-like fruit, which is scarlet when perfectly ripe; two, sometimes three in a berry. These will be found ripe in the latter part of August. They do not germinate in the next spring, but remain dormant during all the following summer as well as both of the winters, and come up in the second spring. During all this time they must be kept moist to ensure germination. They can be safely kept over the first winter and succeeding summer in a wooden



FIG. 91.—A BASKET OF ORCHIDS. (SEE P. 306.)

King of the Pippins as pollen-parent; so it had very interesting progenitors. But it is very evident that the chief impression made by the pollen-parent is in enlarging the leafage somewhat, and of slightly increasing the fruits in size, and materially improving the texture of the flesh. Few Apples in commerce are more worthy of growth for the supply of fruit for children than is this one, which has been shown by Messrs. Jas. Veitch & Co., and appropriately named after Mrs. John Seden, the wife of the raiser. The precocity of the variety in producing fruit was evidenced in the fact that the seedling was heavily laden with fruit in the fourth year. May we not hope to find those beautiful Crabs, John Downie and Dartmouth, also utilised for the production of more of the new race of Apples as commenced in Mrs. John Seden. *A. D.*

DOUBLE SWEET PEA (p. 286).—I have also a double form of this flower, which I have raised from the variety called Venus. The colour remains the same as the parent. Whether the flower is improved

grounds thirty-one years ago, the work being entrusted to the late Robert Marnock. The end of the gardens of Wimbledon House will also mark the termination of my career as a gardener, as for some years past I have been developing a brick-making business, which has now an out-put of two millions and a half per year, so I therefore intend devoting my full attention to this occupation for my amusement and profit. *J. Ollerhead, formerly gardener and bailiff to the late Sir Henry Peek, Bart.*

FLOWERING OF LILIUM GIGANTEUM.—A bulb of this fine Himalayan Lily produced a fine flower-spike this season in the hotel gardens at Whitefield, Garelockhead, N.B. Mr. Monro, the proprietor of the hotel, informed me that this bulb has been in the garden, in various situations, for about a dozen years, but this is the first time it has flowered. The spike measured 7½ feet in height, and 9 inches in circumference at the base, and carried nineteen flowers. It has at present eighteen fully-developed seed-capsules. *J. Brown.*

box by covering the bottom with an inch thickness of moist leaf-mould, strewing upon this a thin layer of seed to be covered with half an inch of leaf-mould, thus alternating with layers of seed and soil, and finishing with an inch or two of leaf-mould. The box should be kept in a shady place, mice and ground-squirrels excluded, and the soil always moist, not soaking wet.

If preferred, the seeds may be sown at once in the seed-bed. It may be made under the shade of tall trees where there is no under-growth, or, if proper shade is provided, in the open garden. In either case the soil must be light, loose, and rich. If necessary to enrich it, let it be done with well-rotted, never with fresh, manure; and that thoroughly worked in so as to be evenly distributed in the soil. The ground should be dug a foot deep, and everything that would interfere with the direct downward growth of the young plants, as sticks, stones, tree-roots, &c., carefully thrown out. When the bed is made in the woods, it will usually be convenient to work in sufficient leaf-mould to make the soil light and porous, but if made in the garden it will be necessary to procure a quantity and work in a liberal supply. Narrow beds, say 3 feet wide, are preferable for convenience in weeding and stirring the soil between the rows of plants. For planting the seeds, drills are made 3 inches apart and 1 inch deep, into which the seeds are dropped 1 inch apart, and covered. If there is danger that the soil may crack or a crust be formed, the bed is covered up with some leaf-mould and brush spread over the surface to remain until the young plants are expected to appear. After the seeds have been in the moist soil for a year and a half, whether they passed the first twelve months packed in a box or the entire eighteen in the seed-bed, the young seedlings are expected to appear with the advent of warm weather in the second spring. During the first season they attain only an inch or two in height, bearing three simple leaves in a whorl at the top. If the soil has been favourable and the plants well cared for by weeding and cultivation, the seedlings will at the end of the second season's growth be large enough to be transplanted into the permanent beds. They are prepared much the same as the seed-beds, the soil thoroughly pulverised a foot deep, everything taken out that would interfere with free root development, yet having less of leaf-mould than the seed-beds, more like a garden loam that is light, friable, porous, and rich.

Transplanting can be done in early spring, but it is said that September or October is preferable. The plants are set out in rows six inches apart each way, putting the new bud of the root-stalk 2 or 3 inches below the surface. Care must be taken to preserve all the little rootlets, and all breaking or trimming of the roots in any way must be sedulously avoided. During the growing season the soil between the plants should be frequently stirred, and kept free from weeds; and before the ground freezes the beds covered well with forest leaves, upon which brush is laid to prevent the leaves from being blown away. Cattle are to be fenced out from access to all beds of Ginseng, for they not only do great damage by trampling on the beds, but also have a great fondness for the foliage.

When circumstances are favourable, these beds, as also the seed-beds, are made in the forest where the trees afford necessary shade and there is a free circulation of air. When they are made in the open ground artificial shade must be provided, such that while the plants have all the needed shade, they have also an unhindered flow of an abundance of air. Mr. George Stanton, who is probably the most successful grower of Ginseng, secures all of these essentials by the following means: he sets rows of posts 8 feet apart and 6 feet apart in the row, 2 feet deep in the ground and 6 feet high, and braces them with strips an inch thick and 3 inches wide, nailed upon the top of the posts, and running in both directions. Upon these are fastened screens made of lath, having a space of $\frac{1}{2}$ of an inch between the strips of lath. Screens made in the same way are fastened to the sides, enclosing the whole from the ground upwards for 3 ft., the remaining 3 feet being left open. In these beds

the plants are grown for five or six years, until they attain the size requisite for profitable marketing. Before that time they will have reached the fruiting age, when above a simple stem about a foot high, bearing a whorl of three to five palmate leaves composed usually of five obovate pointed leaflets, appears a simple umbel supported by a slender peduncle, and containing in July from ten to fifty yellowish-green flowers, which will be succeeded by green berries that in August turn at first purple, then red, and at last, when perfectly ripe, scarlet. These will be carefully gathered and the seeds cared for, from which enlarged plantations and successive crops can be secured. In the fall this part of the plant dies; that which survives, and which alone is of commercial value is the root.

The underground part is not wholly root, that which lies just below the surface, called root-stock (rhizome), is not fleshy and is marked with scars, which indicate the annual above-ground growth of previous years, thus telling the age of the plant. It is believed that the root does not increase materially in size after the eighth year, though it lives to a considerable age, for some have been found having

the export from the United States, showing the number of pounds exported and the average price per pound—

Ten years, 1868-1877—3,881,539 lbs. at \$1.09 per lb.
1878-1887—3,690,360 lbs. at \$1.75 „
Nine years, 1888-1896—2,193,063 lbs. at \$3.04 „

Consul Johnson in his report dated Amoy, July 29, 1897, states that it sells in Amoy at from \$12.50 to \$17.50 per pound, that at these figures Amoy handled in 1896, \$88,517.34 worth of it which came from America in addition to the value of \$44,222.80 from Korea. He adds also the following significant statement, "I do not exaggerate when I state that it is possible to market annually in China twenty million dollars worth of these roots." The italics are the writer's, not Consul Johnson's.

Given a suitable soil, good cultivation with proper attention to shading, ventilation, and preparation for market, the growing of Ginseng in Ontario should be a profitable industry. Mr. Geo. Stanton is quoted by Prof. Butz as stating that the cash product in less than five years from less than two square rods (7'15" of the land had been in Ginseng only four years) was \$387.96. For twenty-eight pounds of his last season's

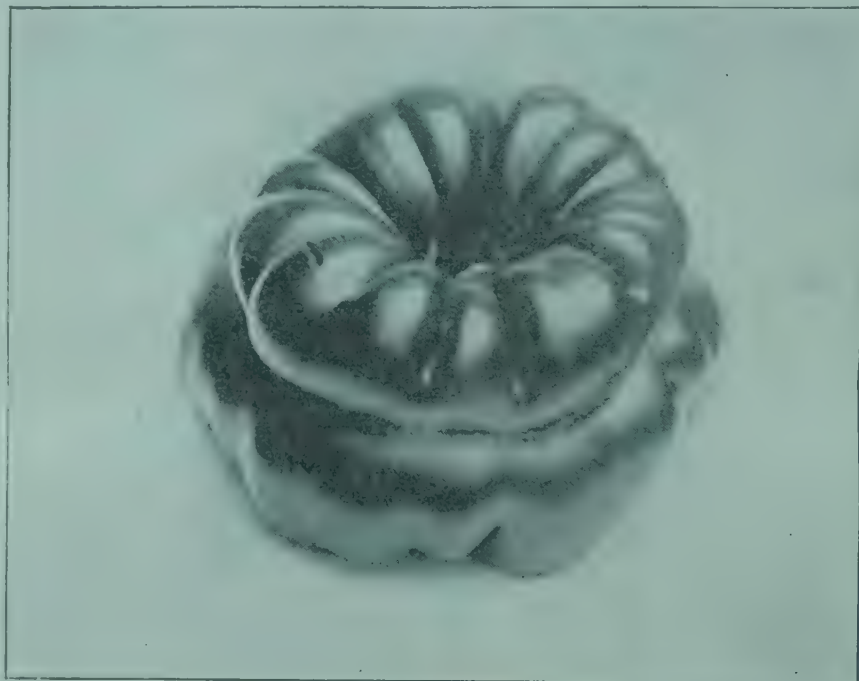


FIG. 92.—A "COTTAGE-LOAF" TOMATO. (SEE P. 309.)

sixty-five of these scars. When roots are eight years old, two years in the seed-bed and six in the permanent-bed, they will be considerably larger than the average of those growing wild, of the same or even greater age. Sometimes roots are found having the human form; these are highly valued by the Chinese, and it is said are worth their weight in gold. Grosier says that Ginseng signifies resemblance to a man. When the cultivated plants are seven or eight years old they will be of the size in which they undergo preparation for market.

In taking the roots out of the ground it is important that they should not be cut or broken, for all cut or mutilated roots are classed in a lower grade. They are then to be washed perfectly clean, without any trimming of the rhizome or rootlets, and dried by spreading them out on hurdles in the sun, or in an evaporator; if in the latter the heat must be regulated so that the roots do not become scorched or partially cooked. If dried quickly without injury they will look better and sell better.

When thoroughly dried the wild roots lose about one-third of their weight, but the cultivated, according to Prof. Butz, do not shrink so much. They have then only to be neatly and securely packed in boxes to be ready for market. That there is a constantly increasing demand will be seen from the statistics of

crop he received \$5.50 per pound, which is a good illustration of the superior quality of cultivated over wild roots. Taking Mr. Stanton's figures as a basis, with time of cultivation in permanent-bed six years, and quantity of ground two square rods, we have at the end of six years a return of \$64.66 a year for two square rods which when increased to a quarter of an acre, which is forty square rods, would make the revenue at the end of the six years \$7,759.20, which would be a dividend of \$1,293.20 for each year, from which is to be deducted all the expense of cultivation, rental value of land, interest on outlay, and reduction in value of tools and plant.

At present it is evident, from the figures given by Consul Johnson, that the exporter has more than a fair share of the profit; for when he gets \$17.50 per pound for best quality and pays only \$5.50, there is a margin of \$12 per pound. Surely the exporter's expenses are not twice those of the grower.

One word of advice to such readers as may feel disposed to embark in the cultivation of Ginseng. Go slow. Begin with a small bed. Experience will teach. If failure be the result, then the loss will not be severe. If success crown the undertaking, which is more probable to him who proceeds cautiously, this article will not have been written in vain. D. W. Beadle, in *The Canadian Horticulturist*.

SOCIETIES.

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

OCTOBER 11.—The monthly meeting of this Society was held at 25, Westgate Road, Newcastle-on-Tyne, on the above date. Mr. Bullock presided over a large attendance of members.

The exhibits consisted of Chrysanthemums and Cactus Dahlias, shown by Mr. ROME, Oakwood, and of Asters shown by Mr. RENWICK, Oakwood.

Mr. Bidgood, B.Sc., F.L.S., gave an interesting account of Vine cultivation in France, treating of grafting, propagation, &c. He also gave an account of the ravages wrought by the Vine-disease, and how it had been partially overcome by the selection and engrafting of varieties which had proved to be better able to withstand it. The lecture proved very instructive, and was followed by an open discussion, many questions being asked Mr. Bidgood, to which he readily replied. Votes of thanks concluded the meeting.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 14.—On the occasion of the meeting of this Society at the Coal Exchange, Manchester, on the above date, there were present W. Thompson, Esq., in the chair; and Messrs. G. W. Law Schofield, A. Warburton, J. Leeman, J. Cypher, W. Holmes, R. Johnson, W. Stevens, and T. Mills (Hon. Sec.).

W. THOMPSON, Esq., Stone, Staffs., was awarded a Silver Medal for a group of plants; A. WARBURTON, Esq., Haslingden, an Award of Merit for a plant of *Laelia prestans alba*; and a First-class Certificate for *Cypripedium Nandif*. SAM. GRATRICK, Esq., of Whalley Range, received Awards of Merit for *Vanda Sanderiana*, *Cypripedium Juno*, *C. Memoria Moensii*, and *C. Orphanum*. THOS. STATTER, Esq., Whitefield, received an Award of Merit for *Cattleya aurea magnifica* and *C. Asltoniana*. MRS. BRIGGS-BURY, of Accrington, had an Award of Merit, for *Cypripedium Lilian Greenwood*, and for *C. Charlesworthii rubescens*.

DR. HORTON SMITH, of Northwich, showed *Laelia elegans Turneri*, receiving an Award of Merit; RICHD. ASHWORTH, Esq., Newchurch, showed *Cattleya Mantini* (Award of Merit); and *Odontoglossum vexillaria Leopoldi* (First-class Certificate); JOHN RICHARDSON, Esq., Hale, showed *Vanda cœrulea*, and received an Award of Merit and a Cultural Certificate; A. J. KEELING, of Bingley, showed *Cattleya Hermione* (Award of Merit); HUGH LOW & CO., Enfield, showed *Cymbidium Tracyanum*, receiving a First-class Certificate.

SHIRLEY AND SURROUNDING DISTRICTS GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT ASSOCIATION.

OCTOBER 17.—The monthly meeting of this body of gardeners took place on the above date at the Parish Room, Shirley, Southampton. Mr. B. LADHAMS, F.R.H.S., presiding over a fair attendance of the members.

Mr. J. MILES, gr., Portwood Park, opened a discussion on "The best Apples for the District," the soil of which is chiefly a shallow loam, resting on a gravelly subsoil. Mr. Miles gave a list of the varieties of kitchen and dessert Apples most suitable to the soil, which really excluded some good varieties which are found to do badly here.

The discussion which ensued brought out the members' personal experiences with some of those mentioned, showing both failures and successes. Mr. Miles afterwards gave reduced lists of varieties suitable for amateurs and cottagers desiring to plant a limited number only. At the close of the discussion a hearty vote of thanks was accorded to Mr. Miles.

Mr. H. CURTIS showed twenty-six dishes of Apples and Pears, and was awarded 1st prize for six Pears, 2nd prize for six dessert Apples, and 2nd for kitchen Apples.

Mr. H. WRIGHT was 1st for dessert Apples, and Mr. WILCOX 3rd. Mr. SNELGROVE was 1st for kitchen Apples, and Mr. BIGGS 3rd. Mr. OTHEN was 2nd for Pears, and Mr. BIGGS 3rd.

GARDENING APPOINTMENTS.

Mr. J. JONES, for the past six years Gardener to the late S. STILL, Esq., J.P., The Grange, Cloughton, Birkenhead, as Gardener to SINCLAIR PORTER, Esq., at the same place.

Mr. ALEXANDER MORTON, for the last three years Foreman at Taymouth Castle, Perthshire, and Foreman at Harewood, Leeds, as Head Gardener to Colonel DRUMMOND, Blair Drummond, Stirlingshire, Scotland.

Mr. DRESSER, as Head Gardener to Miss LODGE, Bishopdale, Aysgarth, R.S.O., Yorkshire.

Mr. WM. IVEY, as Head Gardener to A. PEARSON WALLIS, Esq., Church House, Awkley, Doncaster.

Mr. HENRY ALLEN, as Head Gardener to Mrs. DUFFIS, Sessan Hall, Thirsk. The last three were filled by Messrs. Kent & Brydon, of Darlington.

Mr. J. MAJOR, as Bailiff and Gardener to F. W. B. GUBBINS, Esq., Park Hall, Evesham, Warwickshire.

Mr. ALEX. HOYLE, formerly Head Gardener at Blaston Hall, Leicestershire, as Gardener to THOS. HILL, Esq., Beech House, Heywood, Manchester.

Mr. F. J. CROOK, formerly Gardener to B. B. COLSON, Esq., Winchester, Vice-Chairman of the Winchester Gardeners' Association, as Head Gardener to F. HUGHES-GIBBS, Esq., The Manor House, Gunville, near Blandford, Dorsetshire.

Mr. A. W. OLIVER, formerly Head Gardener at Aspenden Hall, Buntingford, Herts, as Head Gardener to Lady GRANT DUFF, Lexden Park, Colchester.

Mr. RICHARD NISBIT, Jun., for the last three years Gardener at Needwood, as Head Gardener to the Hon. Mrs. BASS, Byrkley Lodge, Burton-on-Trent.

MARKETS.

COVENT GARDEN, OCTOBER 20.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms	3 0-4 0	Mignonette, per 12 bunches	2 0-4 0
Carnations, pr. doz.	1 0-2 0	Orchids:—	
Chrysanthemums, white, 12 blooms	1 0-3 0	Cattleya, 12 bms.	5 0-8 0
Chrysanthemums, yellow, 12 blooms	1 0-3 0	Odontoglossum crispum, 12 bms.	2 0-4 0
Eucharis, per dozen	3 0-4 0	Pelargoniums, scarlet, per 12 bun.	4 0-6 0
Gardenias, per doz.	1 0-2 0	— per 12 sprays	0 4-0 6
Gladioli, white, doz.	0 8-1 0	Roses, Tea, per doz.	0 6-1 0
Lilium Harris, per dozen blooms	3 0-4 0	— yellow (Pearls), per dozen	1 0-2 0
Lily of the Valley, dozen sprays	1 0-2 0	— pink, per dozen	1 0-2 0
Maidenhair Fern, per 12 bunches	4 0-8 0	— Safrano, p. doz.	1 0-2 0
		— red, per dozen	0 6-1 0
		Stephanotis, doz. sprays	1 0-1 6
		Tuberose, 12 blms.	0 3-0 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	4 0-12 0	Ferns, small, per dozen	1 0-2 0
Aspidistras, p. doz.	12 0-30 0	— various, p. doz.	5 0-12 0
— specimen, each	5 0-15 0	Ficus elastica, each	1 0-7 6
Asters, p. doz. pots	4 0-5 0	Foliage plants, per dozen	12 0-36 0
Chrysanthemums, various, per doz.	9 0-24 0	Liliums, various, per dozen	12 0-30 0
Dracenas, each	1 0-7 6	Marguerites, p. doz.	6 0-12 0
— various, p. doz.	12 0-24 0	Palms, various, ea.	2 0-10 0
Ericas, per dozen	12 0-21 0	— specimens, ea.	10 6-84 0
Evergreen shrubs, in variety, p. doz.	6 0-24 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	2 6-4 0	Leeks, per dozen bunches	1 6 —
— Jerusalem, sieve	2 0-3 0	Lettuce, French Cab., doz.	0 10-1 3
Asparagus, Sprue, per bunch	0 6-0 8	Mint, per dozen bunches	2 0-3 0
Beans, Dwfs., Channel Islands, lb.	0 6-0 8	Mushrooms, house, per lb.	0 6-0 9
— Runners, in bus.	3 0-5 0	— outdoor, lb.	0 2-0 3
Beetroots, new, per dozen	0 6-0 9	Onions, Dutch, bag	4 0-4 6
— bushel	2 6 —	— English, cwt.	5 0-5 6
Brussels Sprouts, per sieve	2 6-4 0	— Valencia, cases	6 6-7 0
Cabbage, doz.	1 0-1 6	— Picklers, in bags	2 6-4 6
— Collards, per tally	3 0-5 0	— in sieve	1 9-2 0
— Cardons, each	2 0 —	Parsley, per dozen	1 6-2 0
— French, p. doz.	1 3 —	— sieve	1 0 —
— Yorks, tally	6 0-8 0	Parsnips, per dozen bunches	3 0-4 0
Cauliflowers, English, per dozen	1 0-2 6	— cwt. bags	4 0 —
— per tally	5 0-10 0	Potatoes, Hebrons, Snowdrops, Up-to-Date, &c.	55 0-90 0
Celeriac, per dozen	1 6-2 0	Radishes, Round, breakfast, per dozen bunches (home grown)	1 3-1 9
Cress, doz. punnets	1 6 —	Salad, small, punnets, per dozen	1 3 —
Carrots, washed, in bags	3 6 —	Shallots, per cwt.	8 0 10 0
— Surrey, bunches	2 0-4 0	Spinach, per sieve	2 0-2 6
Celery, White	0 9-1 0	Tomatoes, English, per lb.	0 3-0 4 ½
— Red, doz. bds.	10 0-12 0	— French, crates	3 0-3 6
Cucumbers, p. doz.	1 6-2 6	— Bordeaux, bxs.	1 3-2 0
Endive, English, p. score	1 6-2 0	Turnips, Eng., per dozen	2 6-3 6
— French, per doz.	1 6-2 0	— in bags, good	3 0-3 6
— English, Bata-vian, score	1 6-2 0	Watercress, p. doz. bunches	0 3-0 6
Garlic, per lb.	0 3 —		
Horseradish, New English, bundle	2 0-2 6		
— foreign	1 0-1 4		

POTATOES.

Saxons, Giants, and Up-to-date, 55s. to 85s. per ton. John Bath, 32 and 34, Wellington Street, Covent Garden.

REMARKS.—But little change in Potato trade; Marrows and Runner Beans are practically over; the French Cabbage quoted were well grown, pretty stuff; Mushrooms, outdoor, in large quantities arrived to-day, thus the price of 2d. per lb.; Blackberries are also nearly over; Pears come in a great variety of packages, and the price rules according to quality and size of fruit; the Californian Plums noted were very tender, and looked like the finish of the crop.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Worcester Pearmain, per sieve	4 0 —	Oranges, Jamaica, cases	12 0-14 0
— King, p. sieve	3 0-4 0	Peaches, per doz. (according to size)	10 0-15 0
— Blenheims, per sieve	3 0-4 0	— Second quality	6 0-8 0
— Ribstons, sieve	4 0-5 0	Pears, Calabasse, p. sieve	6 0 —
— Fearn's, p. bush.	6 0 —	— Capiaumont, p. sieve	5 0 6 0
— Large Cookers, per bushel	4 0-6 0	— Marie Louise, and other good varieties	5 0-6 0
— Nova Scotia, Gravensteins, and others, per barrel	15 0-18 6	— Duchess and other good Pears, by the package, p. dz., about	1 2 —
Bananas, bunch	6 0-9 0	— Duchess, cases	4 0 —
Blackberries, peck	1 6 —	— Stewing, cases	6 0 —
— sieve	3 0 —	Pines, each	2 0-4 6
Bullace, Shepherd's per sieve	3 0-3 6	Plums, Bohemian	3 0-4 0
Cobnuts, per 100 lb.	40 0-45 0	— Muscels, sieve	5 0 5 6
Damsons, sieve	3 6-5 0	— Californian Gold Drops (reputed weight 22 lbs.), cases	10 0 —
Figs, per dozen	0 6-0 9	— Quinces, box of 48	4 0 —
— Italian, boxes	3 0-3 6	Walnuts, English, per bushel	3 6-4 6
Grapes, English, Alicante, lb.	1 0-1 3	— shelled, per peck	3 0-5 6
— Gros Colmar	1 0-1 9	— French, shelled, bags, 50 kilos	13 0-14 6
— Hamburg	1 0-1 3	— Grenoble, bags, 28 lb.	5 0-9 0
— second quality	0 8-0 10		
— Channel Isles, per lb.	0 6-0 9		
— Muscats, per lb.	1 0-2 0		
— Almeida, brls.	14 0-18 0		
Melons, each	0 6-1 3		
Oranges, Californian, cases	25 0 —		

FRUIT AND VEGETABLES.

GLASGOW: October 19.—The following are the averages of the prices recorded since our last report:— Apples, Canadian Spy, 25s. per barrel; do., Western States Russets, 30s. do.; Plums, 4d. to 8d. per lb.; Pears, 12s. to 18s. per cwt.; Grapes, home, 3s. 6d. to 4s. 6d. per lb.; foreign, 6d. to 1s. do.; Vegetable-Marrows, 3s. to 6s. per dozen; Tomatoes, Guernsey, 6d. to 8d. per lb.; do., Scotch, 8d. to 10d. do.; Cabbages, 1s. to 1s. 9d. per dozen; Cauliflowers, English, 1s. to 1s. 6d. do.; do., Dublin, 2s. to 2s. 6d. do.; Parsnips, 4s. to 4s. 6d. per cwt.; Potatoes, 5d. to 6d. per stone; Carrots, 3s. to 4s. per cwt.; Artichokes, 3s. per stone; Cucumbers, 3d. to 5d. each; Lettuce, Cabbage, 6d. to 9d. per dozen; do., Cos, 6d. to 9d. do.; Radishes, 1s. 6d. per dozen bunches; Horseradish, 2s. per bundle; Mushrooms, 1s. to 1s. 6d. per lb.; Beetroot, 4d. to 5d. per dozen; Mustard and Cress, 3d. per punnet; Brussels Sprouts, 2s. per stone; Turnips, 3d. to 4d. per bunch; Celery, English, 1s. to 2s. per bundle; red Cabbage, 2s. per dozen.

LIVERPOOL: October 19. — Wholesale Vegetable Market: Potatoes, per cwt., Giants, 2s. 2d. to 2s. 6d.; Main Crop, 2s. 9d. to 3s. 4d.; Bruce, 2s. 4d. to 2s. 10d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 1s. 3d. to 1s. 5d. per cwt.; Carrots, 6d. to 8d. per dozen bunches, and 2s. 9d. to 3s. per cwt.; Parsley, 4d. to 6d. per dozen bunches; Onions, English, 5s. to 5s. 6d. per cwt.; do., foreign, 3s. 6d. to 4s. 6d. do.; Cucumbers, 1s. to 1s. 6d. per dozen; Cauliflowers, 1s. to 2s. do.; Cabbages, 1s. to 1s. 9d. do.; Celery, 1s. to 2s. do. St. John's: Grapes, home, 1s. 6d. to 3s. per lb.; do., foreign, 4d. to 8d. do.; Pine-Apples, 4s. to 6s. each; Damsons, 4d. per lb.; Cob-nuts, 10d. per lb.; Cucumbers, 4d. to 6d. each; Mushrooms, 10d. per lb. and basket; Potatoes, 10d. to 1s. per peck. Birkenhead: Potatoes, 8d. to 10d. per peck; Cucumbers, 2d. to 6d. each; Damsons, 4d. per lb.; Grapes, home, 1s. 6d. to 3s. do.; foreign, 4d. to 8d. do.; Mushrooms, 8d. to 1s. per lb.

SEEDS.

LONDON: October 19.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that to-day's American cablegrams quote much higher prices for Clover seeds. New English Winter Tares, showing good quality, are now attractively cheap. Rye, however, is scarce, and wanted. The market for Mustard and Rapeseed keeps steady. As regards Canary seed, there is a decidedly improved tone, whilst Hemp seed, on the spot, is now almost unobtainable. Blue Peas and Haricot Beans continue in active request at advancing rates. For Wisconsin green boilers there is an increasing inquiry. Scarlet Runner Beans are considerably dearer.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending October 15, and for the corresponding period of 1897, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1897.	1898.	Difference.
	s. d.	s. d.	s. d.
Wheat	31 10	26 6	— 5 4
Barley	28 3	27 11	— 0 4
Oats	16 1	16 6	+ 0 5

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (−) the Mean for the week ending October 15.	ACCUMULATED.				(More +) or less (−) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 2, 1898.	Below 42°, difference from Mean since January 2, 1898.					
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.					
0	3 +	51	0	+ 286	− 240	7	196	42.7	34	30
1	1 +	42	2	+ 192	− 234	2	151	19.4	10	32
2	1 +	53	0	+ 242	− 219	0	aver 131	14.7	21	31
3	0	aver 51	0	+ 180	− 211	2	114	13.6	27	36
4	1 −	44	4	+ 160	− 211	4	118	13.8	18	35
5	0	aver 61	0	+ 251	− 246	5	106	12.8	19	38
6	1 +	48	0	+ 270	− 222	10	170	30.6	21	33
7	1 −	50	0	+ 255	− 247	6	143	24.2	30	36
8	1 +	69	0	+ 299	− 158	2	131	21.5	33	42
9	1 +	50	0	+ 294	− 171	5	183	27.4	32	31
10	1 +	63	0	+ 401	− 138	11	145	28.7	41	36
*	1 +	90	0	+ 480	− 93	3	149	16.7	36	50

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending October 15, is furnished from the Meteorological Office:—

"The weather was unsettled and rainy at the commencement of the week, but subsequently became fair for a time in most districts, although a good deal of mist prevailed. Towards the end of the period very rainy conditions again set in, in the south-west (especially in 'Ireland, S.'). and spread gradually to all parts of the Kingdom. In the west of Scotland, and at most of our south-eastern stations, however, the fall was slight.

"The temperature differed very little from the mean over the Kingdom as a whole, but was 3° above in 'Scotland, N.' The highest of the maxima occurred, as a rule, on the 9th, and ranged from 66° in 'England, S.W.' and 65° in 'England, E.' to 60° in 'England, N.E.' and 'Ireland, N.' The lowest of the minima were generally recorded about the middle of the week, and ranged from 29° in 'Scotland, E.' 'Ireland, N.' and 'England, S.W.' to 37° in 'England, S.' and to 42° in the 'Channel Islands.'

"The rainfall greatly exceeded the mean in 'Ireland, S.' and just equalled it in 'England, N.E.' in all other districts there was a deficit, that in 'Scotland, N. and W.' 'England, S.' and 'Ireland, N.' being large.

"The bright sunshine was deficient in nearly all parts of Great Britain, but exceeded the mean over Ireland, as well as in 'England, N.W.' and 'Scotland, N.' The percentage of possible duration ranged from 41 in 'Ireland, S.' and 36 in the 'Channel Islands,' to 18 in the 'Midland Counties,' and to 10 in 'Scotland, E.'"

NOTICES TO CORRESPONDENTS.

AGRICULTURAL COLLEGES AND SCHOOLS: A. B. W. Cirencester, Downton, near Salisbury; Aspatria, near Carlisle; South-eastern College, Wye, Kent; and Minto House, Edinburgh.

APPLE SCALE (LECANIUM MALI AND MYTHIASPIS POMORUM): G. R. Dress the trees twice or thrice just before they come into bloom with kerosene emulsion. When trees are small, and easily dressed, clay, soft-soap, cow-dung, and lime, formed with sour milk into a thick paint, may be laid on with a stiff (half-worn-out) paint-brush. This may be done at the winter season.

ARTICLES ON ROSES: W. A. J. Time is valuable; can you not indicate the year when the articles appeared in these columns?

BOILER: *Anxious*. Provided the circulation of the water be not stopped by valves in the flow and return pipes, no occurrence of the kind mentioned is probable, whatever be the sort of fuel used. It is assumed that a vent for the escape of steam, should it ever form from excessive firing, exists at the highest point of the pipe-system. The supply cistern should be in connection with the return pipe, at a point near the boiler, and if possible, it should be self-feeding.

BOOKS—FORESTRY: D. P. Anson. We are not aware that the writer in question has written a work on forestry.—A. S. The *Kew Bulletin* is published by Eyre & Spottiswoode, East Harding Street, Fetter Lane, Fleet Street, London, E.C.—G. R. The best work of moderate price on fruits is the *Fruit Manual*, by the late Dr. R. Hogg, fifth edition, published at the office of the *Journal of Horticulture*, 12, Mitre Court Chambers, Fleet Street, E.C. Smaller, but still excellent manuals, are published by Mr. George Bunyard of Maidstone; Messrs. Cheal of Lowfield, Crawley; and Messrs. Smith, of Worcester.

CHRYSANTHEMUM SEROTINUM: G. W. M. Fasciation is not at all uncommon in this and other fast-growing plants.

CLEARING LAND OF LARCH AND FIR-TREE STUMPS: *Stumps*. With strong iron clips, such as builders employ in raising large masses of stone, and a powerful wooden lever, shod with iron on its upper side, and 20 feet in length, resting on a portable fulcrum, having a strong plank as a support, the work could be readily done. In using the lever, the chains to which the clips are attached, should be shortened as much as possible, and the free end of the lever consequently elevated considerably, and with a stout piece of rope fixed to an iron ring at the end, it can be readily pulled down to a height at which it can be seized by four or more men and lowered sufficiently as to extract the stump.

CULINARY APPLES: E. B. C. Manx and Keswick Codlins, Lord Suffield, Lord Grosvenor, New Hawthornden, Peasgood's Nonsuch, Alexander, Wellington, Dumelow's Seedling, Lord Derby, Golden Noble, Tower of Glamis, Alfriston, Prince Bismarck, Northern Greening, Annie Elizabeth, Bramley's Seedling, Lane's Prince Albert, Blenheim Orange Pippin, Small's Admirable, and Queen Caroline. These are varieties which in most soils grow well, and crop abundantly if the weather is propitious at the flowering period. The following are occasionally very good, viz.—Northern Dumpling, Norfolk Beaufin, Lady Heniker, Domino, Jolly Beggar, Cox's Pomona, Mère de Ménage, and Sundringham.

GUMMING IN CHERRY-TREE: W. M. W. The causes of gumming are various. In the first place, there is some injury or wound, inflicted on the bark by the puncture of an insect, by frost, pruning, or other cause. In this wound alight fungus-spores and bacteria. These feed on the starch and other components stored in the bark, and change the sugar, starch, &c., into gum. Irritation of the living tissues of the bark beneath the outer rind, is also set up causing swelling, and as the outermost rind is dead and cannot expand, it cracks and allows the gum to exude. Cold, damp, dark, undrained situations, and bad soil, do not as we believe, actually cause the disease, but they predispose the tree to attack whenever opportunity offers. We cannot recommend any remedy beyond cutting away the affected branches and burning them. If the drainage is wrong, that can be remedied.

INSECT ON TWIGGS OF GOOSEBERRY: T. R. Caterpillar of the "Pepper"-moth (*Amphidasis betularia*). R. McL.

INSECTS: *Thos. L. Green*. *Zeuzera æsculi*.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.—J. J. 1, Tower of Glamis; 2, New Hawthornden; 3, Cox's Pomona; 4, Warner's King; 5, Round Winter Nonsuch; 6, Blenheim Orange.—W. D. 2, Monsallard; 3, Beurré Diel; 4, Maréchal de la Cour; 5, Duchesse d'Angoulême; 6, Doyenné d'Alençon; 7, Comte de Lamy.—W. D. Lynn. 5, Cox's Orange

Pippin; 51, Beurré Rance; 54, Bergamotte d'Espéren.—G. Brown. 1, Maréchal de la Cour; 2, Hampden's Bergamotte; 3, Vicar of Winkfield; 4, Louise Bonne; 6, Catillac.—Geo. Jones. 1, Beurré Hardy; 2, Beurré de Capiaumont; 3, Beurré Diel.—W. C. Large Apple, Reinette du Canada; 2, small, Beauty of Kent.—Bolam & Sons. 1, Bedfordshire Foundling; 2, Worcester Pearmain.—C. W. S. Next week.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—Quintin Read. *Desmodium penduliflorum*.—E. S. R. We only undertake to name species of plants. Florists' varieties frequently resemble each other so closely, that it is necessary to cultivate them, observe their habits, &c., before names of varieties can be satisfactorily determined.—A. C. H. 1, *Dendrobium chrysanthum*; 2, *Oncidium incurvum*; 3, *Cattleya Leopoldi*. The two *Cypripedium Charlesworthi* are ordinary varieties.—W. T. B. 1, *Rondeletia speciosa*; 2, *Davallia dissecta*; 3, *Ageratum mexicanum*; 4, *Davallia Tyermani*; 5, *Doodia caudata*; 6, *Begonia argyrostigma*.—Garaway. *Boussingaultia baseloides*.—A. H. 1, The fragments of leaves appear to be those of *Robinia pseudacacia*; 2, a *Cissus*, probably.—W. F. S. *Rhus Cotinus*, the wig plant.—M. N. R. *Phytolacca dioica*.—G. P. *Caryopteris Mastacanthus*. The under-ground stems from the clay are those of some *Equisetum*.—J. G. W. 1, *Berberis vulgaris*; 2, *Cornus mas albo-variegata*; 3, *Coccoloba platyclada*; 4, *Ginkgo biloba*; 5, *Ligustrum sinense*, probably; 6, *Rhus glabra laciniata*.—G. T. 1 and 2, *Anthericum lineare variegatum*.—W. H. 1, *Abies Webbiana*; 2 and 3, both varieties of the common Spruce, *Picea excelsa*.—W. B. 1, *Pinus Laricio* var. *Pallasiana*; 5, *Juniperus excelsa* var.; 6, *Juniperus communis* var. *hibernica*; 7, *Thuja orientalis*, Japan variety.—R. T. Your *Cymbidium Tracyanum* is of the usual quality of the later introductions, though perhaps scarcely equal to the original.—J. B. The flowers sent are of a pretty and brightly-coloured form of *Cattleya Warszewiczii*, often called in gardens *C. gigas*.—A. B. C. 1, *Adiantum capillus veneris*; 2, *Asparagus plumosus nanus*; 3, *Pteris serrulata*; 4, *Cyperus alternifolius*; 5, *Dracena pulcherrima*; 6, *Begonia incarnata* (metallica); 7, *Abelia triflora*; 8, *Euphorbia splendens*.—A. Hills. The *Poplars* are probably as you describe them, we cannot definitely determine from the specimens. Send No. 3 plant when in flower.—J. K. Perhaps *Crataegus nigra*, so far as we can tell from leaf only.—F. *Salvia Horminum*.

PEAR CRACKING: G. G. See our answer to "Kentish," in our last number (p. 296).

PRONUNCIATION OF LA MOUCHEROTTE: F. C. V. Pronounced Lah Moocherotte. We should be glad to know the opinion of our readers on the pronunciation of foreign names, now so frequently given to varieties of *Chrysanthemums* and other florists' flowers.

RASPBERRIES ON NORTH BORDERS: G. R. Canes planted in such borders are common in southern counties, the fruits forming a succession to those planted in full sunshine. Partial shade is not inimical to the Raspberry. Any but very late or very acid varieties, as *Semper fidelis*, may be planted in such positions.

WATERPROOF PAPER: H. Scott and De P. Anson. See our last issue p. 296, third column.

WORM WITH TWO TAILS: A. B. C. Certainly uncommon but not unparalleled. It arises from the forking or subdivision of the original tail, a circumstance not very rare in the lower animals.

COMMUNICATIONS RECEIVED.—H. T. (*Polygonum*, next week).—A. C. F.—H. T. M.—J. J. W.—E. S.—G. B. M.—Daniells Bros.—*Anxious Inquirer*.—H. C. W.—W. R. F.—B. W. S.—H. G. C.—Dr. Plowright.—N. F. B.—R. S. M.—G. W. S.—W. B.—A. H.—X. (three Pears in a gas-lamp box without any name).—H. M. S.—Albert Maume, Paris.—M. Marshall.—F. C. Heinemann, Erfurt.—H. Chinkaberry, New Jersey.—S. S.—W. N. B.—E. Sieveking.—J. Clayton.—Mrs. R.—Canon E.—A. P. Florence.—A. W. G.—C. de B.—J. O'B.—W. E.—T. B. H.—M. C. O.—W. M. W.—J. R.—Nursery, Florist and Fruit Growers' Syndicate.—Fern Bulletin.—E. Benary (shortly).—W. S.—C. O.—J. R.—H. W. W.—Geo. Fry, Lewisham.—A. H.—W. H. D.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—F. P., Leamington.—H. C., New Jersey.

MARRIAGE.—The marriage of Miss MARTHA DE KERCHOVE DE DENTERGHEM, daughter of the Count de Kerchove de Denterghem, with M. GUSTAV BOËL, Senator, is announced to have taken place at Ghent on the 18th inst. *Félicitations empressees!*



THE Gardeners' Chronicle.

SATURDAY, OCTOBER 29, 1898.

SOME WELSH GARDENS.

I HAVE recently been spending a two months' holiday in North Wales, and have seen a good deal of Denbighshire and Carnarvonshire. I was prepared to find that the Welsh are not a gardening people such as the English are, but I did not expect to find good gardening so rare as it is. I have not seen one really good cottage garden, and the farmers' gardens are not much better. Some, indeed, are as bad as the worst. Usually, the gardens are devoted almost exclusively to growing Potatoes—and weeds, and such weeds, too! vigorous in growth and numberless in quantity, so that I have been almost wild with vexation to see such a reckless waste of fertility.

The truth is, that "the purest of human pleasures" has not yet, to any extent, commended itself to the good graces of the interesting and amiable people of this beautiful country, so that the County and District Councils would do their constituents a great service if they would take some pains to instruct them how to make their gardens pleasanter to look at and more productive of a greater variety of wholesome vegetables and fruits than they are at present. But they will first have to awaken interest in the subject, and this, I confess, will probably be a very up-hill task.

If I might mention a way to get at the masses of the population, I would recommend that the "preachers" of the dominant Nonconformist communities of Wales should be approached, and if they could be led to recognise the value of well-kept gardens to rural people, they might in time be induced to exert some of their undoubted influence to make the people who listen so attentively to their preaching aware of the fact that they could add to their comforts and pleasures by properly cultivating their gardens instead of letting them run wild, as they often do at present. And this might easily be done if at some of the frequent week-evening gatherings in their chapels they would occasionally bring the subject of gardening before the people in a pleasant and convincing manner. At some of these meetings secular subjects are already discussed, as a matter of course, from time to time, for the chapel in many parts of the Principality is the reading-room and institute as well as the place of worship of the people who frequent them. In the parish where I am writing I have been much interested to notice how well these week-evening gatherings are attended. Quarrymen, farm-labourers, farmers, women, and young folks of both sexes are all present, though some of them have to walk long distances to and from their homes among

the mountains, and this after, in many cases, a long day's hard work.

In this salubrious neighbourhood—the west coast of Carnarvonshire—I am living in a mountainous district where slate and granite quarrying and farming are the only occupations. The farms range from small holdings of a few acres up to one hundred or so, only a very small number exceeding that acreage. The land is mostly pasture or meadow, a very small part being arable. The agriculture of the district cannot be called "advanced," neither is it bad; and this season there is such an array of hayricks and stacks of Oats and Barley everywhere, that, taken in conjunction with the large flocks of sheep and the numbers of Welsh black cattle seen in all directions, one is able to realise that the farmers are industrious and energetic, and, to all appearances, thriving. The climate is extremely good, and, though there are very high winds at times, the temperature is fairly equable, and frost is much less prevalent during the winter than it is in the inland towns of England in the same latitude—the Staffordshire Potteries, Buxton, Lincoln, Horncastle, &c. Evidence of this is given by Fuchsias, Hydrangeas, and other plants which here stand the winter with impunity year after year.

Close to where I am just now, there are bushes of Hydrangea 4 to 5 feet through smothered with bloom, and Fuchsias in great beauty, 7 to 8 feet high, grown in hedges and on the centre of lawns without any wall or other protection. Nor are these isolated instances. *Choisya ternata* grows here to a good sized bush, and the Japanese Honeysuckle (*Lonicera aureo-reticulata*) blooms freely; so does the *Arbutus*. These are sufficient proofs of a climate which many residents in the Midland counties would gladly possess. So that it is not a bad climate for out-door gardening that prevails in this part of North Wales; on the contrary, it may be described as one most favourable for the growth of many plants which do not thrive nearly so well in the climate of London and its vicinity, and it is clear that all that is wanted here is the spirit of the true gardener more commonly diffused.

To show that this is so, I will give some account of a few of the well-cultivated gardens I have seen in Wales, two in Denbighshire, and one in the adjoining county of Carnarvon. Both counties have a diversified sea-coast, and each has its mountains, but Carnarvonshire is a mountainous county, while Denbighshire is an upland one. In both, however, many of the physical features are similar, and of these a large number of valleys, with accompanying hills or rising ground near them, are common to both; so, too, is the presence of rivers and streams, though those in Carnarvonshire are the more picturesque, just as its mountains are the more grand and magnificent.

The first garden I shall describe is in the lovely Vale of Clwyd, situated in one of its most beautiful parts. The little river Ystrad runs near it, and the neighbouring country is charmingly diversified with hill and valley, well-cultivated fields, and fine timber trees. The owner of this garden is a lady "to the manner born." She is a devoted gardener, and one who will have nothing but the best of its kind about her. She not only loves her garden, but "loves a greenhouse too." Her taste is eclectic, and she does not attempt to grow too many different kinds of plants. In one of her houses, besides a few good trailers and climbing-plants, the leading features are

such Ferns as are useful for cutting, and a particularly good selection of the finest-named Pelargoniums, of which she grows a considerable number. Whatever plants are grown by her are of the best kinds obtainable, and are cultivated in the best manner. One of her houses, when I paid my visit, was filled entirely with a large and excellent collection of the very best named varieties of tuberous Begonias. All were well grown. There was a preponderance of double varieties, and the colours were white, yellow, pink, scarlet, and crimson, deftly intermingled. As there was not a plant which was not well in bloom, the beauty of the display may be conceived. It was a source of great pleasure to visit this house in the early morning, and I did so on several occasions, and could not but notice how richly and distinctly the varied tints displayed their several charms to the utmost advantage at that delightful period of the day.

The large out-door flower-garden was also very bright and attractive. A fine feature in it was the extremely well-kept lawns, which are of considerable extent, lawn-tennis and croquet being much in vogue in the neighbourhood, which is a favourite residential one. Large beds of Tea Roses, Ivy-leaved Pelargoniums, and the best of the named Carnations were all very beautiful, while a number of other flowers useful for room and table-decoration were to be seen in quantity. At suitable spots isolated Conifers, some of great size, all well-furnished down to the grass, and trained to good shapes showed up superbly.

Adjoining the flower-garden, but separated from it by a hedge, is a large kitchen-garden, bordered on the south side by a treble line of the best herbaceous perennials, showy annuals in isolated patches, Dahlias, &c. This mixed border has for its edging *Erica mediterranea*. Next to this is a grass walk 4 feet wide, which is practically an extension of the lowermost lawn on the same level. A continuous, closely-mown grass-walk over 200 yards in length is thus provided, and forms a charming feature of this pretty and attractive garden. A fine orchard of nearly 200 pyramidal Apples, Pears, Plums, Nut-bushes, &c., occupies a large plot of land beyond the kitchen-garden. The trees which are about a dozen years old, include none but the best varieties, are in good health, and usually yield very large crops of fruit. This year, however, is an exception to the rule, for the crop is small, but those trees which were not affected by the late spring frosts have some fine fruits upon them, which were "swelling" visibly when I saw them at the middle of August.

The next garden I visited was in the same neighbourhood as the foregoing, its owners being two ladies who are among the most devoted and enthusiastic gardeners of my acquaintance. The feature of this garden to which I shall allude is the extremely fine collection of alpine plants it contains. I will not occupy space by enumerating all the plants I saw, most of them in full bloom, but will merely say that they included an immense variety of the most distinctive kinds, many of them not usually seen except in the gardens of specialists. The point I want to emphasise is this: here I found alpine plants of marked beauty grown so well by two ladies who, so far as these plants are concerned, are their own gardeners, that had I not been aware who were the owners, I might easily have supposed the garden belonged to some wealthy man, who had secured the services of a first-class professional

gardener who makes alpine plants his specialty. I saw very few plants that were not grown as well as they are at Kew, and I am glad to say they are grown in good sized patches too, so that even the casual observer cannot see them without being impressed by the show they make. The position of this alpine garden is an exposed one so far as sunshine is concerned. It is, however, protected from bleak winds. On the other hand, the soil is not naturally good, it is too heavy; and it is obvious that nothing but great skill, and the daily attention which a true fondness for gardening alone ensures, must be called into regular exercise in the cultivation of these interesting and beautiful plants, for without such skill and attention, results like those I saw in this garden, would be utterly unattainable.

The third attractive garden I visited was a much larger one than the two above described, and deserves an article to itself. This with the editors's consent, shall appear another week. *E. W. B., Clynnog, October 10, 1898.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT THE BEECHES, ST. JOHN'S WOOD.

IN the rather confined space devoted to garden and plant-houses around the residence of Herbert Druce, Esq., in the Circus Road, as in other districts on the borders of London, the influence of the great city makes it more difficult to carry on gardening as time goes on. Here, as in other places affected by fogs, soft-wooded plants, and what are generally called greenhouse plants, are very difficult to keep in anything like presentable condition, though Orchids, with care and attention, seem to thrive as well in the neighbourhood of London as they do in the country. It is true that those blooming in the foggy season often lose their flowers, but the plants themselves do not seem to suffer. Not only do the Orchids at The Beeches thrive well under the care of Mr. Walker, the gardener, but a number of hybrids of considerable interest have been raised there. Among those now approaching maturity, and which are watched with considerable interest, are various crosses of *Cypripedium Charlesworthi*, which should prove novel and beautiful. Here also are many reputedly difficult plants, which have grown successfully and bloomed regularly for a long period; among them Mr. Walker called attention to some *Cattleya citrina* in fine condition, which had not failed to bloom every year for ten years.

In bloom were several good specimens of *Cattleya labiata autumnalis*, *C. Bowringiana*, *Oncidium Lanceanum*, *Cynoches chlorochilon*, several plants of *Cypripedium Charlesworthi*, one with a very fine rosy-lilac upper sepal, 3 inches across; *C. Chamberlainianum*, which has been in flower for many months; *C. tonsum*, and other *Cypripediums*; *Lycaste Deppei*, a nice show of *Dendrobium Phalenopsis* *Schroderianum*, *D. bigibbum*, *D. formosum giganteum*, &c. In the cool-house, in which Begonias and other greenhouse plants are also grown, the specimens of *Cymbidium* are very vigorous, *C. giganteum* sending up three very stout spikes, and *Odontoglossum crispum*, *O. Pescatorei*, *O. grande*, *Cochlidia vulcanica*, *Maxillaria grandiflora*, *Masdevallia bella*, and others are in bloom.

"SAINT LÉGERIANA."

Under this title the Vicomte de Saint Léger proposes to establish a monthly journal devoted to the illustration of Orchids. Each number is to contain five coloured plates, of the same size as the *Reichenbachia*. The text is to be in French, Portuguese, German and English.

CATASETUM LONGIFOLIUM.

This is a very distinct species from British Guiana, which was first imported about 1838. The specific name is characteristic of its leaves, which are

from 18 to 20 or more inches in length, and very narrow, the sheathing base remaining on the bulbs for some time. A plant flowering here bears two pendent scapes, each carrying thirteen flowers. The sepals and petals are reflexed, and purplish-green in colour; but the most attractive part of the flower is its inflated lip, the edges along each side being lined with a fringe of reddish-coloured hairs, whilst the pouch inside is yellow, with a purple blotch at the front. A moist stove temperature suits it well whilst growing, with but little compost about its roots.

The *Botanical Magazine* contains a figure, t. 3819, under the name of *Monachanthus longifolius*. *R. L. H., Edinburgh*

CEOLOGYNE LAGENARIA.

A number of pretty plants of this showy *Cœlogyne* of the *Pleione* section, and covered with their bright crimson and white flowers, forms year by year an attractive feature in the Orchid-house of T. F. Blackwell, Esq., The Cedars, Harrow Weald. Introduced from the hills of Khasia about 1848, it was for many years regarded by gardeners as a very difficult plant to cultivate; but in more recent times, while some still continue to get small returns for their labours, others not only grow and flower it and some of the allied species easily, but rapidly increase their stocks of the plants. These at The Cedars form a case in point, for originally Mr. J. Dinsmore, the gardener there, had but a few pseudo-bulbs of it; but these he has steadily increased every year until there are now a sufficient number to make a fine display in the autumn. The plants are principally grown in small 48's, and many of them carry from twelve to fifteen flowers. Some of the plants are suspended, and others are arranged round the front of the staging, to which they form an effective border for the Orchids and Anthuriums staged thereon.

CYMBIDIUM TRACEYANUM.

A flower of this fine *Cymbidium*, taken from a plant which was carrying sixty-seven flowers on four spikes, has been sent to us by Mr. R. Thomson, gr. to W. S. Steel, Esq., Philiphaugh, Selkirk. For some time the type plant in Baron Schroder's collection, illustrated in the *Gardeners' Chronicle* in 1890, p. 718, together with a smaller one, represented the plant as observed in cultivation. Occasionally plants have been imported since that time, and the one at Philiphaugh is one of the best type of them. Its large flowers, with greenish-gold sepals and petals, striped with a reddish-chocolate tint, and ornate cream-coloured lip, streaked with red on the side-lobes, and spotted on the front one, approaches very closely the original illustrated in the *Gardeners' Chronicle*.

AMARYLLIS BELLADONNA.

ON more than one occasion lately we have alluded to the splendid form of *Amaryllis Belladonna* in cultivation at Kew. Not only does it differ in size from the ordinary form, but also in the deeper and richer tint of its rose-coloured flowers. Our illustration (fig. 93, p. 315), though greatly reduced, serves to show the proportionate size of the two forms. The larger plant has a scape 3 feet in height, and bears a truss of twenty-six flowers. For the photograph we are indebted to Mr. Watson.

CHRYSANTHEMUMS.

WE are once again entering upon the season when Chrysanthemums almost wholly take the attention of gardeners, and excite the admiration of the public. There are no signs that the flower has lost any of the hold it has had upon our affection, and its supremacy in the foggy, dreary days of November is undoubtedly at present unchallenged by any other flowering plant. It will be interesting to see what effect upon Chrysanthemums the exceptional season of 1898 has had, and whether the displays during next month will be as good as usual. It is a fact that in some collections there has been much injury wrought by the "rust" fungus; but the alarm that was indulged by some growers a week or two since was hardly justifiable. It amounted almost to a

scare, but, like many other scares, it has fortunately been short-lived. It is recognised now, that the pest, like every other plant pest, is subject to certain conditions, and may be prevented by the exercise of ordinary care when once the cultivator has obtained sufficient knowledge of its character and life history. That it has appeared so suddenly to an epidemic degree, has not been definitely explained even by the mycologists, but the suggestion that, having found such a favourable and well fed host-plant as the Chrysanthemum, the fungus would naturally make the most of it, and spread very rapidly, appears to be a common sense view of the matter. Mr. Massee in these pages has told the grower what the fungus is, and how it lives, and multiplies itself, and also that it is a fungus that exists in almost every district upon one or other species of composite plant. But the Chrysanthemum in its native home, it is said, is not attacked by this fungus. The Chrysanthemum has been grown in this country for years, yet until now the fungus has never attacked it seriously. The one point that remains unexplained is this: What circumstances have led to the general attack this season? So far as record has been kept, Chrysanthemum leaves affected by the "rust" fungus were first submitted to the *Gardeners' Chronicle* three years ago.

We had recently the pleasure to inspect Mr. Haywood's Chrysanthemums at Woodhatch Lodge, Reigate, and there Mr. Salter assured us that he had kept the "rust" in check, and indeed killed it, by the use of paraffin, applied directly to the "rust" by means of a small brush. In many instances there were obvious signs upon the leaves that this had been the case, many of them being disfigured on the underside, but at present exhibiting no live fungus. Mr. Wells, of Earlswood Nurseries, has also had the disease to contend with, but has mastered it by a method slightly different to Mr. Salter's. Mr. Wells has syringed or dipped his plants with a liquid prepared as follows: 1 lb. of lime, and 2 lb. of sulphur, boiled for one hour. The liquid from this was poured off, then $\frac{1}{2}$ lb. of common soda, 1 lb. of soft-soap, and $\frac{1}{2}$ pint of paraffin, were mixed together in hot water, and afterwards added to the lime and sulphur wash, making about a gallon altogether. For syringing the plants, one wine-glassful of this mixture was added to a gallon of clear water, and the effect was perfectly satisfactory. In neither collection has the fungus done any serious injury, though it has occasioned some amount of trouble.

Chrysanthemums at present are a trifle late, but the character of the weather may make good this before November is well in. We shall not be surprised if in the London district the blooms are a little less good in quality than usual.

On p. 320 is given a list of Chrysanthemum shows arranged for November. Though this includes only the larger exhibitions, and possibly not all of these, it will be sufficient to indicate the density of the Chrysanthemum season. The week commencing Monday, November 7, will be the busiest; and, unfortunately, on Tuesday, November 8, there will be the National Chrysanthemum Society's Exhibition at the Aquarium; a meeting of the committees of the Royal Horticultural Society at the Drill Hall, and large exhibitions at Birmingham and other places. Steps should have been taken by the executives of both Societies, in the interests of each, to prevent the clashing of the Aquarium Show with the Royal Horticultural Society's meeting. *P.*

SEASONABLE HINTS.

From the present time the gardener will have an anxious period of about three weeks' duration, especially if he be a raiser of large blossoms. Those who devote their energies to the supplying of cut blooms only, or for home decoration, have no conception of the amount of care required by plants which are intended to compete for valuable prizes in the best company. Concurrently with the development of the blooms, earwigs and woodlice increase; it would surprise the novice to find what damage the first-named can wreak upon three-parts of, say, a fully-developed incurved bloom in a night. In Japanese varieties the florets are more

numerous, and so formed that the loss of one is easily covered by its neighbour; but in the incurved or Chinese section, where the recurve of the floret is an important point, a damaged floret cannot be spared so easily. Where the Chrysanthemum-plants are brought into flower in such available places as vineries and Peach-houses, where the borders are wholly or partly inside, and often thickly covered with a mulch of manure, this dry manure affords a safe retreat during the daytime for earwigs and woodlice. A close watch must be kept and search made by candle-light, and various methods of trapping adopted, as for example, Broad Bean stalks, cut in lengths of 1 foot, and pieces of rolled black cloth thrust amongst the leaves as a harbour by day. It is surprising how many earwigs may

Where plants have to be given extra heat to hasten their development, cockroaches are more liable to attack the plants than in a cold house.

Green caterpillars are at times a source of annoyance, and except by chance the night is the only time when they may be discovered. It will readily be seen that growers of Chrysanthemums for exhibition have sundry enemies to contend with, all of which must be kept within bounds if perfect blooms are to be obtained.

The ventilation of the house by night, too, is of importance. Afford more or less air as the weather may suggest, and in such a manner that no rain falls upon the flowers. All dead leaves should be sedulously removed from the plants. Plants having blooms upon them three parts developed should not

fulness on the part of the workmen, much damage may be done to the tender florets. The best way to carry a tall plant when in bloom is this:—One person should take the pot, and another the branches, and the flowers, which should be carried in a horizontal position, the blooms dependent, yet held securely, a gentle swinging doing them no harm. If any variety is likely to be too much advanced at the required time, remove the plants to a cool, dry shed or cellar where air can reach them but no moisture, as soon as the petals are developed. If the blooms of any variety are backward, instead of leaving them in their present position until a few days before the show, when much heat would be necessary to hasten their development, thereby rendering a loss of colour, remove the plants to slightly warmer quarters, and push them on very gradually, which will bring no loss of colour. If two or three doses of sulphate of ammonia be afforded backward plants, the blooms will develop more quickly. In obstinate cases a pinch of nitrate of soda in the water at one application, and supplied when the soil is moist, will greatly assist the growth of the petals.

Chrysanthemums being hardy plants, it is more natural for the flowers to expand in a cool place than in strong heat. The colour then under proper conditions will be more in its true character than when subjected to long heat, which tends to produce washy tints. Japanese varieties will stand more heat than the incurveds, the latter being liable to reflex their florets when hastened very rapidly. It is the compactness of the exterior florets that makes a perfect incurved bloom. Perhaps the reverse is more applicable to the Japanese.

Reverting briefly to the subject of retaining blooms in a fresh condition after they are fully developed without removing them from the plants, it may be stated that they may be removed from the plant, and kept in a satisfactory condition for, say, eight days; in some instances longer. When cut, the flowers should be perfectly developed just at the time they are quite at their best, and before they lose their freshness.

The commencement of decay is best shown by the lower florets becoming soft and flabby. An experienced cultivator is able to tell in the dark the condition of the blooms, a certain softness of touch being a sure sign of decay. When this occurs the white varieties soon assume a pink tinge. When cutting a blossom, let at the least 10 or 12 inches of the stem and leaves be retained, so that a small portion may be cut off each day, and place the stalk in a bottle filled with water, to which a pinch of table-salt has been added. It matters not whether the water be hard or soft. Place the blooms in a cool, slightly-darkened room having a dry atmosphere.

Large-flowered varieties of the incurved section, notably those of the Queen of England type, may be considerably improved and assisted while developing, especially if the plants are being subjected to heat to hasten them, by hanging the blooms downwards. This can only safely be done by releasing the plants from the upright support, tying them to wires similar to a Vine-trellis running up the roof, thus allowing the blooms to hang loosely down. This position induces the florets to grow in a natural manner, viz., incurving toward the centre. *E. Molyneux.*

CHRYSANTHEMUMS AT THE CEDARS, HARROW WEALD.

In the long ranges of vineries in the gardens of T. F. Blackwell, Esq. (Mr. Dinsmore, gr.), contain at the present time a fine show of Chrysanthemums, the flowers throughout being splendid examples. More than the ordinary amount of attention was bestowed upon them during the summer in the matter of affording water to the roots, or the results would have been anything but satisfactory. Specially noteworthy among the varieties were T. B. Haywood, Mrs. H. Weeks, Simplicity, Lady Ellen Clark, fine whites; Madame J. Bernard, a noble white, with yellow-tinted centre petals; Master Jas. Epps, Edith Tabor, Joseph Brooks, and Oceana, very fine yellows; Eva Knowles, buff, with red-brown reverse to the petals; Joseph Chamberlain, an attractive bronze Japanese;



FIG. 93.—AMARYLLIS BELLADONNA.

(To show the difference between the ordinary form and the Kew variety. Much reduced. See p. 314.)

be caught every morning by strict attention to the examination of these traps. Woodlice can only be exterminated by hand-picking at night, and where they are very numerous, the work must be incessantly carried out. A woodlouse has a habit of ensconcing itself in the centre of a bloom in the daytime, and of eating its way out, as it were, by night. Slugs, too, often disfigure the flowers by crawling over them, and in some cases gnawing the florets. Where any trace of these creatures is noticed during the day, they are almost sure to revisit that particular spot the following night; and knowing this habit, slugs can usually be caught by searching for them after dark. Some bran laid on the top of the pot will also serve as a bait for them. Cockroaches, where numerous, are sure to molest the blooms, and these insects are rather more difficult to entrap when feeding, as the moment a light is turned on them off they go.

receive more water than is absolutely necessary to keep the soil just moist; and any stagnation of moisture at the roots at this stage is highly dangerous.

Timing the blooms is an important detail, and one which should not be neglected. Timing them means having the bloom or head of blooms in perfection at a certain date. An experienced exhibitor will know it is of no use whatever to have some varieties past their best and others not expanded. What is required is that all the varieties, or nearly so, of those to be exhibited, should be in perfection at the appointed time. It will be found necessary two or three weeks before a show to hasten some of the plants and retard others.

The moving of tall plants when in bloom from one house to another for the purpose of retarding those which are found to be too forward, requires doing in a systematic manner, as without the utmost care-

Australia, Elthorne Beauty, Pride of Madford, Viviani Morel, and other favourites, all in splendid condition, and as a whole, making a grand display. Here, as in many other gardens, the beauty of the Chrysanthemum affords the amplest reason for their high cultivation, as without these plants the gardens, in most places, would just now be somewhat bare of flowers.

THE ROSARY.

OCTOBER IN THE ROSE GARDEN.

DURING the early part of October our Tea Roses were so parched that the flower-buds could not expand, and many of them perished. In spite of this, the ripened wood below was making shoots, and now that rain has fallen, and the air is dew-laden at night, there is quite a number of Rose blossoms at the time of writing (October 24), and one of the best is G. Nabonnand. This variety is always good late in the season, and it stands well after the extra warm time we have passed through. Of free-flowering Roses, G. Nabonnand is the most certain, and it is very seldom that one finds any blind or flowerless growths. It has handsome foliage, a long and well-formed bud, and blooms are so freely produced that they may be gathered without stint. It is such Roses as this one which should be extensively grown where Roses for cutting are much required. Another strong grower with flowers boldly carried is Souvenir de Catherine Guillot. This also has very deep bronzy-red foliage and wood, an immense number of buds, all of which expand much better after cutting than the majority of Roses. The tints of this Rose are difficult to describe. Copper salmon, nasturtium-red, orange and apricot, are all found in it at varying stages of the flower. These last two Roses are simply perfection late in the season. Although not possessed of many petals, they do not expand so quickly as most, and they are always showy. The blossoms of Madame Abel Chatenay are exceedingly pretty at the present time, and attract notice at once from their deep salmon-carmine centre. This variety is also a free grower and productive bloomer, but not so much so as the two first-named. Papa Gontier is a Rose with a deep crimson-tinted bud, which opens as a large few-petalled flower. With this one we have four grand decorative Roses still in full blossom outside.

Undoubtedly the Rose of the year has been Mrs. W. J. Grant, and plants of this variety are in flower at this date. All who require a good late deep cherry-red Rose must grow Tom Wood, for scarcely a shoot of this fails to have blossoms, and I find it to be as nearly free from mildew and red-rust as any of the Hybrid Perpetuals, not excepting Ulrich Brunner. One of the prettiest features in the Rose-garden now are the various forms of *R. rugosa*. Even through the heat and drought of the summer, these did not appear in the least distressed, and when others were sadly disfigured by mildew and orange-rust, the *rugosas* were looking quite healthy. The new *rugosa* from Bath, named *Delicata*, is exceptionally free, and has the sweetest perfume of any Rose. It is a pity the birds play such havoc among the hedges of *R. rugosa*. I do not know of any flowering shrub so good for town gardens as these Roses. One of the prettiest beds I have seen was formed of a half-standard white *rugosa*, surrounded by dwarf plants of the darker colours.

Victor Hugo and Marquis of Salisbury are still very bright. The first is a grand late Rose, and keeps its intense deep scarlet shade long after the flower has expanded. Some I have noted were fresh and brilliant for more than a week.

Meteor is a Rose that is never seen at its best out-of-doors till late in the season, and then it is really a fine flower of deep crimson and maroon colours. Earlier it gets burnt with crumpled outer petals, but at the present time some fine trusses may be gathered from the bushes.

Owing to the drought, most of our plants were considerably more than half-ripened when the rain came, especially the hybrid perpetuals; and unless cooler weather ensues forthwith, new growths will

be made, which cannot possibly mature, and much of what would be valuable wood will be crippled. It is different with Teas and Noisettes of ordinary vigour, which never seem at a standstill until several sharp frosts, and a very short spell of genial weather causes them to break into blossom again.

It will be well to take advantage of the present open weather, and get the planting of Roses performed early, so as to check the formation of new growths, and assist the ripening of the wood. A. Piper.

AMERICAN NOTES.

THE DATE PALM IN ARIZONA.

WHILE we who live in the Northern States think most about fruits which will resist the greatest possible degree of cold, other American horticulturists are facing quite different problems. It is a very interesting illustration of the breadth and variety of the work done in the agricultural experiment stations of the United States to note the recent *Bulletin* published by the Arizona Experiment Station, and written by Professor J. W. Toumey. The *Bulletin* contains many details of no interest to the public, but the general conclusion is reached that Date-growing on a commercial scale is possible in certain favoured sections of the desert region of Southern California and Arizona. The Date Palm tree itself will grow in many localities where it does not fruit, or where it seldom fruits. Some few trees now growing in the State, and varying in age from 15 to 25 years, form the chief basis of these conclusions, though some faith is also placed in the similarity of the Arizona climate to that of the Old World regions where Date Palms are grown. The United States Department of Agriculture, through the Division of Pomology, has taken an interest in the culture of the Date Palm, and at different times has made importations of Old World varieties from Cairo, Arabia, Algeria, &c. Real material results in convincing quantity are still awaited, however.

SAN JOSÉ SCALE IN MARYLAND.

One of the most extensive publications among the many recently issued, dealing with the San José scale in various parts of America, is a recent bulletin by Professor W. G. Johnson, of Maryland. The San José scale has been comparatively destructive in that neighbourhood, and Professor Johnson has had exceptional facilities, as well as an exceptional willingness, to study it. The present volume might almost be called a treatise on the subject, covering 116 pages, and including an index and many illustrations, with a good portrait of the late lamented Dr. C. V. Riley as a frontispiece. It gives the history of the scale, its introduction, its present distribution, and the status of the work for its suppression. Professor Johnson evidently regards the San José scale as a very serious factor in fruit culture in Maryland, but thinks that the system of state inspection, fumigations, and renovations now in practice will control the pest to such an extent as to prevent the sorrowful necessity of abandoning the thousands of acres of Peaches, Plums, and other fruits now growing in that State.

"PRINCIPLES OF FRUIT-GROWING."

This is one of the most popular of Professor Bailey's many works on horticultural subjects. It has gone to a second edition in a trifle over a year. I am told that it has found a considerable market in Australia, New Zealand, Tasmania, and in other remote spots, that it sells in fact everywhere that people speak English and cultivate fruit-trees. The second edition has some slight changes, the principal one being a chapter in the appendix relating to methods of describing and classifying fruits. The new preface is a very interesting essay, setting forth the contrast between European and American methods of fruit-culture. Professor Bailey thinks that the American excels in large commercial operations, in growing and selling large quantities of uniform fruit in distant

markets; but that the European fruit-grower understands much better how to grow fancy fruit in small quantities for the home demand.

NEW YORK STATE COLLEGE OF FORESTRY.

This institution was founded by an Act of the New York State Legislature in the spring of 1898, and has already begun its work. The State Legislature appropriated 10,000 dols. to establish and maintain the school for the present, and also arranged for the establishment of a college forest of not more than 30,000 acres. A considerable portion of this land, I am told, has already been located. It lies in the mountainous region of the Adirondacks, and is covered with more or less first and second growth Spruce, Pine, American Larch, Hemlock, and broad-leaved species. It seems altogether probable that the practical demonstrations to be made in this college forest will have a very great value for the whole United States. The College of Forestry has been made a department of Cornell University, located at Ithaca. Dr. B. E. Fernow has given up his work as chief of the Division of Forestry in the United States Department of Agriculture, to become director of the new college of forestry and professor of forestry therein. His former assistant in Washington, Mr. Filibert Roth, makes the same transfer, and becomes assistant-professor of forestry, forest manager, and instructor in timber physics and technology. Courses have already been begun at Cornell University, and, though the registration of students in the College of Forestry proper is yet small, the lecture courses are well attended by students from other departments of the University. The regular course of instruction now outlined occupies four years, and leads to the degree of Bachelor of the Science of Forestry; but several shorter courses have likewise been provided. F. A. Waugh.

HYBRIDISATION OF SPREKELIA AND HIPPEASTRUM.

In your issue of June 14, 1898, p. 272, "Delta" writes: "I was told that Dr. Bonavia succeeded after many years in getting a cross between these two (*Sprekelia formosissima* and *Hippeastrum*)." I beg to state, that although I have often tried to cross these two, I never have succeeded in producing any result, and I am not aware that anybody else has ever succeeded. It is impossible to say what may happen in similar attempts in different climates, in different soils, and under different conditions. The *Vallota* seems as refractory with *Hippeastrums* as the *Sprekelia*. "Nothing can be known without trying," and trying persistently under different conditions.

Who would have thought that among Orchids *Sophranitis* and *Lælia* could intermarry—two distinct genera, according to botanists. *Epidendrum* and *Cattleya* or *Lælia* have also been successfully crossed. Anatomical distinctness does not necessarily mean physiological distinctness. Two plants may be anatomically distinct, while physiologically they may be one.

When in India, I imported a *Hippeastrum* bulb from Holland. It flowered, but would not cross either way with plants I got from Lucknow. The next season it flowered again, and I tried it in both ways, but again without any success. The third season I repeated the operations, and obtained a number of seeds, both by its pollen on my *Hippeastrums*, and their pollen on its pistil. Now these were both *Hippeastrums*. Thinking over the matter, I thought that possibly either the Dutch bulb was too young to produce crossable pollen and pistil, or it was not sufficiently acclimatised to effect a successful cross.

I have noticed this refractoriness in other cases of *Hippeastrum*; although anatomically one, they may have been physiologically distinct. Who would have thought that the lion and the tiger would cross? Yet this has been done. The form and coloration of the *Sprekelia* are so lovely, that attempts at crossing them under different conditions should continue.

Lilies amongst themselves are very difficult to cross. *Lilium Parkmanni* is said to have been a cross between *L. auratum* and *L. speciosum rubrum*. But

no one has been able to repeat this cross—if it was one, for some disbelieve that it was evolved through such a cross. The curious thing is, that this magnificent Lily does not seed; that is, it will not take its own pollen. The Sprekelia and the Vallota also do not take their own pollen, so far as my experience goes.

I have no doubt that the regular form of the Hippeastrum can, by selection and crossing, be transformed into the Sprekelia type, but it would require patience, perseverance and time. All irregular forms of flowers have been evolved from regular forms, and there is no reason why, by manipulation, this result should not be again produced. *E. Bonavia, M.D., London, August 15, 1898, in "Indian Gardening."*

nevertheless a month when the success attending the work of the past six months is apparent. I found many of the houses were undergoing alteration for more modern methods of ventilation, and a new system of hot-water was being carried out.

Several vineries I found in this transition, stags and in cases where a house had been planted years ago with several varieties in it, this was being replanted with one only. One new house was planted in January last, and good canes had run up this season. Capital crops were hanging on those Vines not yet interfered with, the Muscats being especially good. The secret in regard to two canes of Muscat was doubtless owing to the fact that young canes of this variety had been inarched on a well-rooted cane

with standards and pyramids, that it is intended to plunge out on the lawns or in the flower-beds. Next spring the plants will be of good size, and, it is hoped, will make a distinct feature in the pleasure-grounds. Perhaps even better than standing them singly, would be the placing of ten or a dozen in a clump, not too closely together, with some loose-growing Lobelia or Verbena as an undergrowth; these are free and rapid-growing, and would soon hide any appearance of bareness, that sometimes is observable in the Fuchsias. Free-blooming varieties, with flowers of but medium size, as are the sorts here, are far to be preferred to the larger flowering varieties.

Palms and Ferns are indispensable for the decora-



FIG. 94.—SOUVENIR DE LA MALMAISON CARNATIONS AT IWERNE MINSTER.

IWERNE MINSTER HOUSE.

(By our Special Commissioner.)

THIS noble establishment is six miles from Blandford, but having called at Shillingstone, I had but three miles to traverse before reaching it.

Iwerne Minster House, though built some eighteen years ago, has still a new look about it; to take this off, the lower walls are all wired, and the Ivy planted has made good growth, so that many parts are already covered with it. The pleasure-grounds are in excellent keeping, grand trees rearing their heads to a great height, and, as many stand singly on the lawns and park their grand proportions may be observed in a notable manner. Much new landscape work has been undertaken during the past few years, and as the seasons pass, these portions blend with the older, and add a richness and completeness to the scenery, such as it did not formerly possess. Perhaps August is not the most desirable month to visit gardens, at least we are sometimes told that is the case; but it is

of [Black] Hamburg. The canes of Muscat now three years old, were very strong, and bearing a good crop. The bunches were better shaped, that is, had broader shoulders, and were not quite so attenuated as other Muscats close by. The setting quality of the flowers was decidedly more free and certain, the berries were of large size, and the flavour excellent. Mr. Th. Foakes, the gardener, expressed himself as highly pleased with this method, and purposed inarching several others. I have observed this plan carried out at several other places in the south. The variety Mrs. Pince was likewise in very good form; and the flavour of Mrs. Pearson (white) was excellent. In one house, a number of young Peach and Nectarine-trees was planted last January, and had made good growth; other Peach-houses had excellent crops, whilst a number grown in pots were now stood outside, that the wood may become hard by exposure.

I found the cultivation of specimen Fuchsias practised here. A house was occupied exclusively

tion of the mansion, and these also have divisions entirely devoted to them. They look well, and, as is the case with all plants used for this purpose, moisture and heat are now given to cause growth, so that any blemishes may as quickly as is possible be covered over with healthy and vigorous fronds. Chrysanthemums are well grown, and some 900 plants, as bush specimens, or others for the production of blooms, were looking well.

Here, too, Carnations are grown in great numbers. The Malmaison varieties had flowered, and layering was being effected. In fig. 94 is illustrated a house of these when in bloom. Of the tree-variety Mrs. L. de Rothschild some 1500 plants are grown, and these, with Miss Joliffe and others make it possible for Mr. Foakes to cut Carnation-blooms any day during the year. The method adopted with these is simple enough. Cuttings are inserted in pots in January, and struck in a little heat. As soon as they are rooted, they are potted into 3-inch pots, and then later in the

spring into 7-inch pots. Carnations in different stages of growth are met with in almost all places. The Begonia, Gloire de Sceaux, filled one house entirely, and was in capital condition; whilst the pretty Gloire de Lorraine was represented by a large number of plants in pots and frames.

In one of the stoves I noticed a large portion of the roof covered with Allamanda cathartica, the flowers of this are somewhat smaller than A. Hendersoni, and are most useful for vases and table decoration. Another variety even less in size than A. cathartica is A. Williamsii, which is well deserving a place where this class of flowers can be used. To say that Violets are not forgotten is a negative way of stating the fact that borders were filled with young plants. Spring-flowering bulbs are also grown in large numbers, Lily of the Valley crowns being utilised to a great extent, since the desire is to have this lovely gem in flower as early as possible, and to lengthen its blooming period as long as can be done. Some thousand Strawberry-plants in pots are forced each season, and preference is given to Royal Sovereign.

Passing through the pleasure-grounds and flower-gardens, I noticed some pretty flower-beds. In many nooks herbaceous plants were gay, and a pond was utilised for Rushes, Iris, and Water Lilies; whilst strong-growing Ferns had a capital rockery quite set apart for them. The kitchen-garden is some distance from the pleasure-grounds, and with that near the glasshouses is well cropped. Cabbages are grown in large numbers; Melons, Cucumbers, Tomatoes, and Figs are perfectly satisfactory.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Hard-wooded Plants.—So long as the weather keeps open and mild, all the air possible should be afforded these plants. Those for example, as Indian Azaleas, Rhododendrons, &c., which are liable to be overrun by thrips, should be syringed once a day as a precaution, and should the pests be present on the plants fumigate the house twice, on alternate evenings, for, if the pests are not annihilated quickly, yellow leaves will soon be apparent. If the present mild weather continues no fire will be needed. Take great care that no plants become dry at the roots, and no crowding of the plants occurs. When plants have been standing out-of-doors it is not advisable to keep the greenhouse very dry, as doing so leads to the dropping-off of the leaves, Camellias being great sufferers in this way.

Myrsiphyllum asparagoides.—Do not allow growing shoots to become entangled, but go over them at intervals, and tie them in neatly without bruising or breaking. This species is useful where much indoor decoration has to be carried out; and a good number of plants should be grown. Those which are grown are improved if weak guano-water be often applied. Let plenty of air be afforded when the weather permits.

Adiantums.—Those plants which were closely cut-over and have been rested somewhat, may now be started into growth by putting them in an intermediate temperature, affording them some weak stimulus when growth has become active. Such Adiantums as have developed fronds may be placed in a cool position in full light, and afforded a fair amount of fresh air. Thus treated, the fronds last longer when removed from the plants than those that are grown in a close, moist house.

Herbaceous Calceolarias.—Only cold-frame or greenhouse treatment is suited to the needs of the Calceolaria in mild, open weather; and in the event of autumn frosts, coverings are better than fire-heat, and these are readily applied when the plants are placed in cold-frames or pits. Greenfly must be diligently kept under by fumigation, and air must be admitted to the plants in mild weather, so as to obtain compact, stocky growth, and healthy leaves.

Celosias.—The later-sown batches of plants available for decoration at this season having been afforded cool-house treatment, will have well developed plumes. Those, on the contrary, which have pushed on in heat will be more delicate, and will need careful hardening off before they are placed in a cold green-

house. If any plant should be in a backward condition, let it be grown close to the glass, in an airy intermediate-house, which will have the effect of checking or preventing spindling of the plants.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

The Apple.—Where trees are being purchased from the nursery, whether for forming bushes or espaliers, they should always be obtained on the English Paradise stock, upon which the Apple gives much finer fruit than on the free stock, as the former has more abundant fibrous roots running near the surface, therefore within reach of rain, and readily affected by manurial top-dressings during growth; besides, the trees do not make so much wood as is the case on the Crab, nor are they so large-headed as to overshadow other crops; they continue in bearing without root-pruning longer than those, and they come into bearing much sooner. I have found, as doubtless have other gardeners, that the French Paradise stock does not enable the Apple worked upon it to make enough growth for ordinary purposes, although no fault can be found with the fruitfulness of any variety worked upon stocks of this species; and it may be considered a useful stock for small gardens. Bushes on the French Paradise will bear a lot of fruit when from 2 to 4 feet high, and they may be planted at 4 feet apart. Apples on Paradise stocks may be transplanted without being much checked in fruit-bearing for even one season if the work be performed at about this date. For orchard culture the wilding Crab or free stock, as it is called, is best, and trees worked on it afford the greater weight of fruit per acre; owing, however, to the length of time required for a standard tree to form a head and come into bearing, it is desirable to cover the ground between the standards with Apples in bush form or worked on the English Paradise, or else with Currants and Gooseberries. By this means the cultivator obtains remunerative crops whilst waiting for the Apple-trees to come in bearing. This is a much better system than sowing down an orchard with grass-seeds, the trees making better progress, because the soil must necessarily be well tilled. In planting an orchard, varieties (if more than one tree be planted) should be kept together, either as an entire row or part of one, as the gathering of the fruit is then more quickly done. If possible, an orchard should be placed upon rising ground, with a gradual slope to the south or south-west, and the north-east winds are less destructive to the flowers and young foliage in the spring. Shelter there should be from the west and south-west winds, which blow most severely at a time of the year when the fruit is attaining to full size. This may be provided against by planting a belt of Canadian Poplar, Balsam Poplar, Larch, and Spruce trees at a distance of 30 yards or thereabouts from the boundary of the orchard, and these growing up quickly will screen the trees from the wind without forming a harbour for insects destructive to fruit trees.

Select Lists for Garden Culture: Dessert Varieties.—Mr. Gladstone, Beauty of Bath, Duchess' Favourite, Duchess of Oldenburgh, St. Edmund's Pippin, Worcester Pearmain, Summer Golden Pippin, Margil, Ribston Pippin, King of Pippins, Cox's Orange Pippin, Wyken Pippin, Cockle Pippin, Claygate Pearmain, Duke of Devonshire, Allington Pippin, Allen's Everlasting, Lord Burghley, Rosemary Russet, Sturmer Pippin.

Kitchen Varieties.—Lord Suffield (only fit for warm soils and aspects), Lord Grosvenor (if the first cannot be employed), Grenadier, Ecklinville Seedling, Warner's King, Frogmore Prolific, Peasgood's Nonsuch, Sirling Castle, Golden Noble, Blenheim Orange, New or Winter Hawthornden, Bismarck, Lane's Prince Albert, Annie Elizabeth, Dumelow's Seedling, Newton Wonder, Bramley's Seedling, Barnack Beauty, Northern Greening, Easter Pippin. The above are good bearing varieties in their order of ripening, and will give a succession of fruit throughout the season.

For orchard planting, if for private use, the above selection, with the exception of Lane's Prince Albert, will be suitable. If for market purposes:—

Dessert Varieties.—Duchess of Oldenburgh, Worcester Pearmain, Summer Golden Pippin, King of Pippins, Cox's Orange Pippin, Rosemary Russet.

Kitchen Varieties.—Grenadier, Lord Grosvenor, Warner's King, Peasgood's Nonsuch, Cox's Pomona, Golden Noble, Blenheim Orange, New Hawthornden,

Waltham Abbey Seedling, Bismarck, Annie Elizabeth, Newton Wonder, Dumelow's Seedling, Bramley's Seedling, Barnack Beauty.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

French Beans.—Plants in frames and pits bearing a crop should be given air during mild weather, but on no account must frost be allowed to reach the plants. Throw a few mats over the structures during frosty nights. Maintain a constant supply of Beans by making frequent sowings. It is of no use to rush the plants with excessive heat, nor to crowd them together in the forcing-houses. Keep them in a steady temperature by day of 65° to 70°, with a night temperature of 60° to 65°.

Globe Artichokes.—Prepare a heap of litter, consisting of dry rough stable-manure, straw, Bracken, and Oak or Beech-tree leaves, and on a dry day wheel this on to the ground, putting it between the rows. Cut off all the leaves and stems from the Artichokes to within 1 foot of the soil; then place the litter loosely around the plants in such a manner as will not prevent air reaching the plants. Do not cover the hearts, or they will decay.

Trenching and Digging Land.—As every kind of culinary vegetable derives more or less benefit from a timely and suitable tilling of the soil by digging one, two, or more spits deep, the sooner in the winter this work is performed, in the case of heavy and medium soils, the better. The last three dry summers have brought the matter of deep-digging of the land home to most gardeners—the deepest and best-tilled land has always carried the best vegetables, of course, with the addition of more or less manure. At this season a plan should be sketched of the intended cropping of the garden, and the soil prepared accordingly. The main divisions will be those which will carry the Pea, Onion, Carrot, Parsnip, Beetroot, and Potato crops, remembering not to have two crops of an exhaustive nature, or belonging to the same genus, following each other, and changing as much as possible the positions of the different kinds of vegetables.

Brussels Sprouts.—On a day when the plants are not wet with rain, let those with the forwarder sprouts be cleared of decaying leaves and any which will come away with a slight touch, and thus admit the sunlight amongst the plants, in order to avert to some extent the loss of leaves during the winter. Let the later-planted rows be moulded up for the last time. These last, in the event of our getting a few more weeks of mild weather, will carry a moderate crop of sprouts of a useful size.

Seeds which may be Sown.—Some early round-seeded Peas may be sown this month on a south border. Kentish Invicta and Ringleader are good hardy varieties. If these are selected for sowing, the rows should be 2½ feet apart, and the drills 3 inches deep, made flat at the bottom, so that the seeds may lie at the least an inch or two apart. The land, if in fair heart, should not be manured, but potash and manure-water may be applied in the spring. Broad Beans may be similarly treated, but manure is not inimical to this vegetable. The early Mazagan is a trustworthy variety to sow. Let the rows be 2 feet apart, and the drills as deep as for Peas.

Salsify and Scorzonera.—These roots may be lifted and stored in sand in a light cellar, with the tops shortened to 2 inches, protruding so that growth may go on.

Potatoes.—The tubers in the Potato cellars, &c., should be looked over, and all small and diseased ones removed. Examine likewise the seed Potatoes, and if the least sign of dampness be noticed, let them be removed to a drier place. Potatoes pitted out-of-doors must be well protected against the ingress of rain and snow, otherwise great loss of tubers will occur.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Vandas (continued).—It may be well to mention a few of the varieties which are best known and more generally cultivated, as V. tricolor, V. t. planilabris, V. t. Dalkeith var., V. t. Bassetti, V. t. formosa, V. t. Dr. Paterson's var., V. t. Chatsworth var., V. suavis, and V. s. Veitchi. It is generally remarked by Orchid growers that these handsome plants are not nearly so well grown as formerly, and from my own observation when visiting other collections, I believe

the principal reason to be that the plants are grown much too warm, and they are given an insufficiency of fresh air and moisture. Give the plants generous treatment, and no difficulty need be experienced in cultivating and blooming them. A group of Vandas, furnished with strong healthy leaves down to the rim of the pot, whether in or out of bloom, is an imposing feature in the Orchid-house. Any of these plants that require to be repotted may be so treated at once. Less foliage will be likely to suffer now than were the work deferred until spring. Some growers fear to interfere with Vandas even when they become "leggy," and consider the cutting of them down to be erroneous practice, but if the plants are attended to at the proper season, and care used in the operation, as well as in the treatment afforded the plants immediately afterwards, no fear need be entertained. If a plant must be repotted because of a loss of leaves at its base, the old material and drainage should be removed, and if any roots are clinging to the sides of the pot, gently detach them with a thin-bladed knife. In most cases there will be found live roots some distance up the stem, which will allow of a portion of the stem to be cut off, and so much should be removed that when the plant is placed in the new pot the lowest pair of leaves will be almost down to the rim. Place the plant in the centre of the pot, and put a few large crocks at the bottom, which may be covered with a thin layer of sphagnum-moss. Replace the lowermost roots over the surface, and carefully work in amongst them some clean crocks, and a moderate quantity of unchopped sphagnum-moss, pressing it firmly down. Then distribute more roots in a like manner, bringing them well up to the surface, and filling up to within half an inch of the top. Finish off with clean healthy sphagnum-moss, well mixed with finely broken crocks. Afterwards secure each stem in an upright position to neat wooden stakes, it being essential that the plant should not move about. Any of the large fleshy aerial roots that are long enough may be pegged down on the surface of the moss, and in time these will root into it. The more roots enticed down in this way the better. The repotted plants must be shaded from all sunshine, and no water need be afforded them for several days, after which give them a thorough soaking. The moss on the surface will soon become dry again, when it should be lightly sprinkled over, and kept growing in this way until each plant has re-established itself, when the quantity of water may be gradually increased. The potting material, however, must never be kept in a saturated condition, it being more advisable to keep the surroundings moist by damping between the pots and under the stages several times daily. Large healthy specimens that need no root disturbance, will only require to be resurfaced with living sphagnum-moss, but if there be any suspicion of the old moss low down in the pot having become decomposed, it should be carefully picked out from between the roots, and fresh material substituted. Vandas require a cool intermediate-house temperature, and a cool moist stage for them to stand upon. Some cultivators stand the plants on open wood-work stages immediately over or near to the hot water-pipes. No worse place could be found for them. If they must be placed over the pipes, the stage should be covered with thin slates or tiles, over which a layer of finely broken coal or coke should be laid to a depth of 3 or 4 inches, which will hold moisture. All newly-imported Vandas should be potted in crocks only. Keep the stems and lower leaves well syringed to prevent undue shrivelling. As soon as roots appear, the plants may be potted in the ordinary manner.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford, Kent.

Alterations and Improvements.—The season has arrived when ground work, turf-laying, the formation of beds, borders, shrubberies, rockeries, &c., may be undertaken with less chance of the work being impeded by bad weather. When turf has to be laid or relaid, the ground should be dug over half a spit deep, obliterating every inequality in doing this, and finishing-off the job by a good even trampling and raking with an iron rake. Turf should be very carefully laid, the joints being as close as it is possible to make them. When the whole is turfed over, a sprinkling of finely-sifted loam should be brushed into the spaces, and on the first dry day a heavy roller should be passed over it.

Shrubs.—The removal of most of the evergreen shrubs may be carried out at this season, care being taken to secure good balls of soil with them, and to plant in a hole considerably larger than the ball or the stretch of the roots. Having placed the plant in position,

only a little deeper than it was before, fill in around the ball and among the roots with fine soil, a little at a time, and if it be dry, wash it amongst them with water from a can having no rose on the spout, then place more soil over the roots, make the whole firm by treading it evenly; and finish off neatly. If the staple is clayey, some leaf-soil may be well incorporated with it, or failing this, charred soil, wood-ashes, or some not-much-decayed manure. Where new shrubberies are to be made, the ground should be dug two or three spits, manure or leaf-mould being incorporated with it during the operation. Do not plant before the land has settled after being trenched, or in wet weather, or before the ground has become dry enough not to stick to the boots or the tools. These precautions are of great importance if the soil be heavy.

General Remarks.—Much work will be found by the gardener from now onwards to the close of the year, for the flower-garden and pleasure-grounds must be kept with neatness; tree-leaves collected almost daily, and the lawns swept and rolled once or twice a week. The rains will have caused the grass to grow anew, and the mowing-machines and scythes cannot be put away just yet. Grass verges and the edges of the lawns must be neatly trimmed and well defined. Walks of binding gravel will need frequent rolling to keep them firm. Creepers on walks and fences may need some attention by removing or securing long shoots, and affording a mulch of rotten manure to the borders. The borders of herbaceous perennials must be tidied up, and the stems, &c., removed. When the walks are hard, as after frost, manure may be wheeled on to the beds in readiness for being dug in. Gladiolus corms may now be lifted and put just as they are in a cool place to dry, previous to being stored away in sand for the winter. Hardy herbaceous plants that admit of increase by division, may be taken up and divided; and if manure can be spared, the border may be dressed with it. *Helleborus niger* (Christmas Rose), should have bell-glasses or handlights placed over them to preserve the purity of the flowers. Keep a sharp look-out for wireworms amongst recently planted Carnation layers, and if the appearance of a plant indicates their presence on the roots, scrape the soil carefully away from the plants, and find the creatures. Layers of the Carnation should be potted forthwith, and stood out-of-doors until hard weather compels their removal to cold pits or frames.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Figs.—Any plants which require more root-space may be repotted, using turfy loam, with about one-eighth in bulk of lime-rubble or slaked lime, and the same of burned soil, added in greater or lesser quantity according to the nature of the loam and its constituents. A quart of bone-meal to a wheelbarrow-load of the soil affords desirable nutriment to the Fig. Before replanting, shorten the strongest roots. The potting should be firmly performed as the pot is filled up, the ball being sunk about 1 inch deeper than before. Large trees that have not been potted for a year, must be repotted into the same size pots or tubs, or re-surfaced with the soil, making it firm by ramming it. When a plant is repotted, &c., sufficient water should be afforded to moisten the ball throughout, and then stood in a cold-house.

The Earliest Pot-Vines.—We are now at the commencement of the forcing season for Grapes, and first among the varieties in favour comes the Black Hamburgh, than which none is easier to force and obtain of good quality in the latter half of the month of April. A good companion variety to grow along with it is Foster's Seedling, although there are others which force as readily, as Chasselas Vibert, a round white Sweetwater, ripening early naturally—one of the best; Duke of Buccleuch, a handsome round berry, and fine bunch, becoming of a fine amber colour when ripe; Ascot Citronelle, an oval Muscat Grape, ripening three weeks in advance of the Black Hamburgh, well worthy of being grown in moderate quantity, but, as Mr. Barron remarks in his treatise on the Vine, "too small for extended cultivation;" and Ascot Frontignan, a round white Muscat of first-class quality. Cultivators might add some or all of these varieties to their collection, with the certainty of giving interest to the dessert. The best pot Vines for early work are those which have made two seasons' growth, and have been once cut back, and the growth of such was completed and ripened much earlier than usual this year.

The early vinery should have a full south aspect; and before anything else is done, it should be well cleansed in every part, and the walls lime-washed, taking the precaution to put a handful of flowers-of-sulphur into the white-wash bucket. Everything of a nature to harbour mildew, red-spider, thrips, or mealy-bug, should be cleared out of the vinery, together with a few inches of the top soil if there be any borders. If means of affording bottom-heat exist, a mass of Beech and Oak leaves should be placed therein, and be well trampled down as the filling of the pit goes on. If the house is not provided with a bed for bottom-heat, let the Vines be placed on a shelf along the front of the house, but at some distance from the hot-water pipes. I have grown Vines for many years by both methods, but I prefer to plunge the pots to the rim in a bed. Before putting the Vines into the house let them be dressed with one of the usual Vine dressings. In a former Calendar I advised the shortening of the pot Vines to the required length, and if this has been omitted, and the Vines are found to be too long for the rafters, do not shorten the canes now, but disbud instead when they have broken, as any pruning carried out immediately before beginning to force might set up bleeding when the sap becomes active. Let the Vines be placed 2 feet apart, and in order to encourage a regular break, tie them along the lower part of the trellis, causing the canes to form a slight bow. The canes may remain thus till after they have broken, which is usually in about a period of six weeks. They may then be tied along the rafters, at about 1 foot distant from the glass. Let the forcing go on very gradually, with a temperature of not more than 50° at night, a few degrees higher if mild, and a few lower in time of frost; and 55° in the day with or without fire-heat, allowing it to rise 10° to 15° higher if the sun-heat is powerful enough, and maintain a moist but not a stagnant atmosphere, damping the Vines and all bare surfaces once, twice, or thrice a day, as may be necessary, and affording ventilation in accordance with the state of the weather. This kind of treatment must be persevered in till the canes break, at which stage the temperature may be raised 2° or 3°. When approaching dryness, afford applications of tepid water to the soil in the pots, examining the pots twice a week if plunged, and every day if standing on shelves.

Borders of Vineries to be started later may also have a thin covering of leaves, which may be added to at a later date. This early covering of the borders prevents the escape of heat latent in the soil.

THE APIARY.

By EXPERT.

Extracting and Cleaning-up Combs.—Boxes of combs, after the honey is extracted, must be given to the bees to clean-up before being stored away till next year. Some care is needed in getting this job completed without disturbance, and a little trouble will be well repaid. The combs should be given to a few stocks only; allow two or three colonies to do all the cleaning-up for the whole apiary, and give the wet combs after nightfall, taking special care that no strange bees get at the combs from the outside. The latest form of super-cleaver—which provides for the re-admission of the bees to boxes of wet combs which have been replaced on hives for cleaning-up, preparatory for storing away for winter—affords great assistance in preventing excitement, and consequent "robbing." With a couple of these clearers in use, all combs may, after extracting, be got into the necessary clean condition with a minimum of risk or trouble.

Clearing away Summer Appliances.—Clear everything in the shape of appliances away after they are done with, and do not forget to parcel and label each lot when they have been cleaned and prepared for use next year. Surplus brood-combs should always be marked and numbered before packing away, in order that they may occupy the same positions in the same hives next season. In contracting hives for winter, remove all combs not covered with bees, and after noting the hive from which they are taken, stow them away by themselves, and use them again when required for the same stock—this is a possible preventive of infection. As the weather becomes colder, bees will occupy a very much smaller portion of the hive, and it will soon be seen how many combs will be needed to winter on. About eight standard-sized frames will be the number required for a fair stock, but only leave as many as the bees can cover, and be certain that each has not less than 20 lb. of food at the end of October.

APPOINTMENTS FOR NOVEMBER.

		Scottish Horticultural Association meet.
TUESDAY,	Nov. 1	Chrysanthemum Exhibitions at Torquay (2 days); Southampton (2 days); Stratford-on-Avon (2 days); Croydon (2 days); Watford (2 days); Kingston-on-Thames (2 days); Eastbourne (2 days).
WEDNESDAY,	Nov. 2	Chrysanthemum Exhibitions at Isle of Thanet (2 days); Wolverhampton (2 days); Dorchester (2 days); Jersey (2 days); Ascot (2 days); Blackheath (2 days); North Peckham (3 days); Lowestoft (2 days); Woking (2 days).
THURSDAY,	Nov. 3	Chrysanthemum Shows at Exeter (2 days); Plymouth (2 days); Wandsworth (2 days); Maidenhead (2 days).
FRIDAY,	Nov. 4	Battersea Chrysanthemum Show (2 days).
SATURDAY,	Nov. 5	North Scotland Root, Vegetable, and Fruit Show.
		Royal Horticultural Society's Committees.
TUESDAY,	Nov. 8	National Chrysanthemum Society's Exhibition at the Royal Aquarium (3 days). Chrysanthemum Shows at Birmingham (3 days); Highgate (3 days); Yeovil; Coventry (2 days).
WEDNESDAY,	Nov. 9	Chrysanthemum Shows at Bourne-mouth (2 days); Jersey (2 days); Wisbech (2 days); Hanley, Staffs. (2 days); Cardiff (two days); Liverpool (2 days).
		Harrogate Chrysanthemum Show (2 days).
THURSDAY,	Nov. 10	Cambridgeshire Horticultural Society's Chrysanthemum Show at Cambridge; Windsor, Eton and District Chrysanthemum Show; Sidcup (Kent) Horticultural Society's Chrysanthemum Show (two days).
FRIDAY,	Nov. 11	Chrysanthemum Shows at Nottingham (2 days); Leicester (2 days); Sheffield (2 days); Dalkey, Wiltshire, Cheshire (2 days); Bradford (2 days); Huddersfield (2 days); Altrincham, Bowdon, Sale and District Chrysanthemum Society's Show (2 days); Eccles (2 days).
MONDAY,	Nov. 14	National Chrysanthemum Society's Floral Committee meet.
		Ulster Horticultural Society's Chrysanthemum Show at Belfast (2 days).
		Brighton and Sussex Horticultural Society's Chrysanthemum Show (2 days).
TUESDAY,	Nov. 15	Folkestone and District Chrysanthemum Society's Show (2 days). Leeds Paxton Society's Chrysanthemum Show (2 days). Winchester Chrysanthemum Show (2 days). Great Yarmouth Chrysanthemum Society's Show (2 days).
		Ancient Society of York Florists Chrysanthemum Show (3 days).
		Buxton Chrysanthemum Show.
WEDNESDAY,	Nov. 16	Bristol Chrysanthemum Show (2 days). Hull Chrysanthemum Show (2 days). Ayrshire Horticultural and Agricultural Society's Winter Show at Ayr.
THURSDAY,	Nov. 17	Scottish Horticultural Society's Chrysanthemum Show, in Waverley Market, Edinburgh (3 days).
		Royal Botanical and Horticultural Society of Manchester Chrysanthemum Show, in St. James' Hall (3 days).
FRIDAY,	Nov. 18	Stockport Chrysanthemum Show (2 days).
MONDAY,	Nov. 21	National Chrysanthemum Society Floral Committee Meet.
TUESDAY,	Nov. 22	Royal Horticultural Society: Committees Meet.
THURSDAY,	Nov. 24	Dundee Chrysanthemum Society's Exhibition (3 days).
MONDAY,	Nov. 28	National Chrysanthemum Society General Committee Meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—45° 4'.

ACTUAL TEMPERATURES:—

LONDON.—October 26 (6 P.M.): Max., 62°; Min., 56°.

PROVINCES.—October 26 (6 P.M.): Max., 59°, Dungeness; Min., 49°, Shetland.

Mild, fine, little rain.

SALES FOR THE ENSUING WEEK.

MONDAY,	Oct. 31	Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Nov. 1	Dutch Bulbs, at Protheroe & Morris' Rooms. Great Annual Sale of thousands of Herbaceous and other Plants, at Ware's Nurseries, Tottenham, by Protheroe & Morris (2 days). Clearance Sale of Orchids, Stove and Greenhouse Plants, Greenhouses, &c., at Swanswell, Coventry, by order of John Powers Esq., by Protheroe & Morris.

National Chrysanthemum Society.

THAT there is nothing that succeeds like success, is an aphorism which might be applied to the National Chrysanthemum Society. Its progress of late years has been remarkable. The tide of popular favour has set in, to the advantage of the Chrysanthemum and its growers, and the Society has been wise enough "to take it at the flood." Success by the populace is estimated mostly in terms of £ s. d.—a sordid way of



FIG. 95.—TAXODIUM DISTICHUM IN SUMMER AND WINTER, IN THE GARDENS AT STONELEIGH ABBEY. (SEE P. 323.)

WEDNESDAY,	Nov. 2	Dutch Bulbs, &c., at Protheroe & Morris' Rooms. Imported and Established Orchids, at Protheroe & Morris' Rooms.
THURSDAY,	Nov. 3	Dutch Bulbs, at Protheroe & Morris' Rooms. Clearance Sale of Nursery Stock, at Muller's Nursery, Ivy Lane, Brockley, S.E., by order of Messrs. B. Muller & Sons, by Protheroe & Morris (2 days).
FRIDAY,	Nov. 4	Dutch Bulbs, at Protheroe & Morris' Rooms. Imported and Established Orchids, at Protheroe & Morris' Rooms.

looking at things, doubtless, but we fear the only way in which the majority can be made to appreciate the work of a society such as that to which we are now alluding. The larger the amount of prize-money that can be offered, the better the shows, and the greater the satisfaction of the exhibitors. A large amount of prize-money cannot be obtained without a large body of subscribers, and a large body of subscribers cannot be held together without large shows

and big prizes. The factors governing success are interchangeable and inseparable.

Other circumstances that go a very long way to explain the success of the Society are the small amount charged for membership, and the central position in which the shows are held. But the success of a Society should not be looked at exclusively from the financial point of view. The work that a Society does, apart from mere prize-giving, and the way in which it does it, are of greater importance than mere monetary possessions. A good reputation—a good character as it would be called when speaking of an individual—is at least as important as a big balance at

may, even its very existence, may depend upon the action taken by the members.

We suppose that those who really feel that the Aquarium at Westminster is a fit and proper place for the exhibitions of a body with the pretensions of the Chrysanthemum Society are very few. Nevertheless, the majority seem swayed exclusively by financial considerations, and herein lies the *crux*.

A statement of recent proceedings will make this clear. Some doubts had evidently arisen as to the wisdom of continuing to hold the shows at the Aquarium, and consequently a sub-committee was appointed to consider the subject, and to ascertain what, if any, more

rightly informed, the company is prepared to give as large a monetary subvention as do the directors of the Aquarium. The distance from the centre of London, or rather the time occupied in the journey to and fro militate powerfully against the Palace, and it will be for the members of the Society to decide whether this objection is sufficient to outweigh the manifest advantages which the site at Sydenham offers.

Does not this all show the great need there is of an independent Horticultural Institute in London, where all the societies could be accommodated, where the library could be properly housed, and which



FIG. 96.—VIEW OF RIVER AND STONE BRIDGE AT STONELEIGH ABBEY. (SEE P. 323.)

the bankers, and should be jealously maintained by the governing body. The fulfilment of the objects for which it was established—increase of knowledge, progress and adaptation to circumstances as they arise—these are matters upon which in the long run success depends, quite as much as upon financial well-doing.

Societies rise and fall, but when they fall, it is generally because they have run away from first principles, and gone off to worship strange gods. If they elect to worship Mammon rather than to pursue the primary aim of their existence, their success is sure to be fleeting. We allude to these matters now, not with any idea of insinuating ought against the Society, but rather because it seems to have arrived at a parting of the ways, and its future success,

suitable place could be found. The sub-committee, as we learn in their report, almost unanimously recommended that in future the shows be held at the Crystal Palace. In spite of this recommendation, however, the executive committee, by a large majority, set aside the recommendations of the sub-committee, and determined to recommend to the members at large the continuance of the Society at Westminster. So the matter stands for the present. It will, we suppose, shortly come up for the consideration of the members at large, and their decision will, of course, be final.

The Aquarium is about as bad and inconvenient a place wherein to hold a show as could be named, but it has the merit of accessibility. The Crystal Palace, in many respects, is an ideal place for a flower show, and, if we are

might be the head-quarters of the gardening charities? The Chrysanthemum Society in its search for a home has had precisely the same experience as that which befell the Royal Horticultural Society when it was compelled to migrate from South Kensington. The engagement of the Drill Hall for the fortnightly meeting of the committees was from the first only considered as a temporary arrangement in default of others more appropriate. Some years have elapsed, and still no more suitable place has been found. Let us hope that the experience of the Societies may speedily induce conjoint action, and that before the coming century is out of its infancy horticulture may be endowed with its much-needed institute, and be independent of everybody and every locality.

ROYAL HORTICULTURAL SOCIETY.—The October part of the *Journal of the Royal Horticultural Society* has recently been issued. It contains the text of Mr. ENOCH's informing lecture on "Insect Blights and Blessings," concerning which we can only say it is far too short. Mr. BURBIDGE's lecture on "Fragrant Leaves" is also given, as well as Mr. O'BRIEN's lecture on "Hybrid Orchids." Mr. MANSON BAILEY describes various North Australian species of *Nepenthes*, among them being *N. Rowanae* and *N. Jardinei*, new species of which, it is to be hoped, botanical journals will take note, as it is very long since any species were described in the publications of the Society, and they may therefore be overlooked. Pitcher-plants usually grow "in unhealthy, hot, humid parts of the globe, conditions not to be met with in any part of Australia. In fact, it would be difficult to find a more healthy locality than that in which our Australian Pitcher-plants grow." The other species alluded to by Mr. BAILEY are *N. Kennedyi* and *N. Bernaysii*.

"THE FLORA OF TROPICAL AFRICA."—The concluding part of the seventh volume has now been issued (LOVELL, REEVE & Co.). It contains the remainder of the *Amaryllidaceae* and the whole of the *Liliaceae*, from the pen of the indefatigable J. G. BAKER, so that its value as a work of reference for cultivators may readily be assessed. As many of our readers are aware, the three first volumes of this publication were issued under the editorship and largely under the authorship of Professor OLIVER. When he relinquished his task, the publication came to a standstill. In spite of official and other protests, it was allowed to remain incomplete till comparatively lately, when a vigorous effort has been made to continue it, and the result is the publication of the present volume, which contains the petaloid monocotyledons. We believe that the manuscript for numerous other orders to fill up the gap between the third and the seventh volumes is in a forward state of preparation, though there is an ominous paragraph in the preface—to the following effect: "The printing of the volume commenced in July of last year [1897], and has been attended with very considerable difficulties. Whether it is followed by any other volumes will largely depend on the extent to which these difficulties are removed." A strange pronouncement to be made in the case of a publication issued by the Government, with the resources of civilisation at their disposal.

CHRYSANTHEMUM SHOW AT LILLE.—In November an exhibition will be held in the Palais Rameau, Lille, by the Société des Chrysanthémistes du Nord de la France, in collaboration with two local societies. A congress will be held, and certain entertainments and excursions are planned. It is proposed, on November 11, to visit the nurseries of Roubaix, Tourcoing, established at Watreloos, where warming apparatus by low-pressure steam was first adopted on a large scale. One apparatus heats nearly two-and-a-half acres of glass. Excursions will also be made to other houses at Roubaix; then the grounds of Dutrie Frères, at Steenwerck, and the vineries at Bailleul. Here an iron house is in course of construction, 260 feet long, and 56 feet wide; the ground was prepared on August 1, and on the date of the intended visit the building is to be not merely completed, but stocked with 150,000 Chrysanthemums, and, probably, lighted by electricity. Another erection to be completed by that day is a house 65 feet long, to contain a gas-motor to work a pump to raise 170 cubic feet of water an hour. The water is to feed a pond of 211,000 cubic feet capacity. In these establishments are five vineries, each over 500 feet long by 26 feet wide, and each containing 150,000 bunches of Grapes.

SIR HENRY BARKLY.—The death of this eminent statesman is announced. He was successively Governor of British Guiana, Jamaica, Mauritius, Victoria, and the Cape of Good Hope. In all these capacities Sir HENRY elicited the commendation and gratitude alike of the colonists and of the home Government. Horticulturists and botanists also held

him in high esteem for the manner in which he promoted the interests of science and practical agriculture wherever he went. He was a frequent correspondent with the authorities at Kew, which establishment is indebted to him for numerous introductions.

ANTWERP ARTISANS AS GARDENERS.—At Lierre, near Antwerp, a "Dodona" Society has been started, with the object of encouraging horticulture among working-men, and based on similar institutions in England. At the first meeting more than 300 artisan members were present. It is hoped that the pursuit of gardening may brighten many dull homes, and prove beneficial in various ways. The horticultural press would be doing good service in calling attention to the new society.

DECORATIONS.—We learn from the *Semaine Horticole* that among other members of the fraternity less known in this country, the French Minister of Agriculture has appointed M. CHARLES BALTET, HENRI MARTINET, and CROZY, as officers of the "Merite Agricole," and MM. BOUCHARLAT, RIVOIRE and DAUTHENAY as Chevaliers of the Order.

LINNEAN SOCIETY.—The first meeting of the Society for the forthcoming session will be held here on Thursday, November 3, at 8.0 P.M., when the following papers will be read:—Prof. H. MARSHALL WARD, D.Sc., F.R.S., F.L.S., and Miss DALE, "On *Craterostigma pumilum*, Hochst." Rev. T. R. STEBBING, M.A., F.R.S., "Amphipoda from the Copenhagen Museum and other Sources. Part II." Exhibitions:—Prof. HOWES, LL.D., F.R.S., "Embryos of Hatteria." Mr. ALAN F. CROSSMAN, F.L.S., "Photographs of chicken with foster-parent a common buzzard." Messrs. H. & J. GROVES, F.L.S., *Nitella hyalina*, Ag., a new British plant.

MESSRS. JOHN LAING & SONS, nurserymen, Forest Hill, S.E., have been awarded, by the International Jury of the Earl's Court Exhibition, a Diploma, together with a Gold Medal for the meritorious display they have made with flowering plants, &c., in the gardens during the past season.

CHRYSANTHEMUMS ABROAD.—There seems to be no flagging in the interest excited by the Chrysanthemum in foreign countries, judging both by the literary activity displayed, and the notices of forthcoming shows, some of the latter being events of more than ordinary importance. American shows will no doubt be quite as numerous as ever, and on the Continent there will be several attempts to surpass even the most successful of previous efforts. Italy, France, Belgium, Germany, and probably Portugal, have all entered the list; while we learn that there will be two Chrysanthemum shows in Egypt, and one in Algeria.

THIRD CENTENARY OF THE BIRTH OF VANDYKE.—We have already mentioned that in connection with the fêtes commemorating the third centenary of the birth of Vandyke, there will be held a horticultural show at Antwerp, from the 9th to the 13th of next April. The programme of the exhibition is just published, and includes mention of nearly 200 sections, and of certain prizes to be awarded. The King and Queen offer gold Medals for competition. That from the King is to be allotted for the best collection of fifteen plants with ornamental foliage, such as Palms, Cycads, Aroids, Pandanus, and Cyclanthes; the Medal given by the Queen is to be awarded for the best five-and-twenty plants in flower. The president of the Horticultural Society, Baron Oey de Z-gwaart, Governor of the province, offers an award for the finest and best-arranged group of Orchids; the vice-president, M. Jean Everaerts, a prize for the best forty miscellaneous greenhouse-plants. The exhibition is to be held in the Palais des Fêtes, in the Zoological Garden. *Ch. De B.*

"LE DICTIONNAIRE PRATIQUE D'HORTICULTURE," in other words, the French translation of NICHOLSON'S *Dictionary of Gardening*, has now reached

the last letter of the alphabet. We advise those who read French to add it to their libraries, as several additions to the original work have been made by the translator, M. MOTTET. The work is published by M. OCTAVE DOIN, Place de l'Odéon, Paris, and may be procured through any foreign bookseller.

THE NARCISSUS FLOWER.—Prof. CELAKOVSKY, in the *Bulletin* of the Bohemian Academy of Science (1898), has a paper in which he shows that the tube of the flower is not axile, but a portion of the perianth-tube with which the bases of the stamens are incorporated. The cup or corona is an out-growth (excrecence) from the perianth, as it is also in *Pancratium* and *Eucharis*, but the stamens are in these cases still more consolidated with the perianth-tube from the beginning.

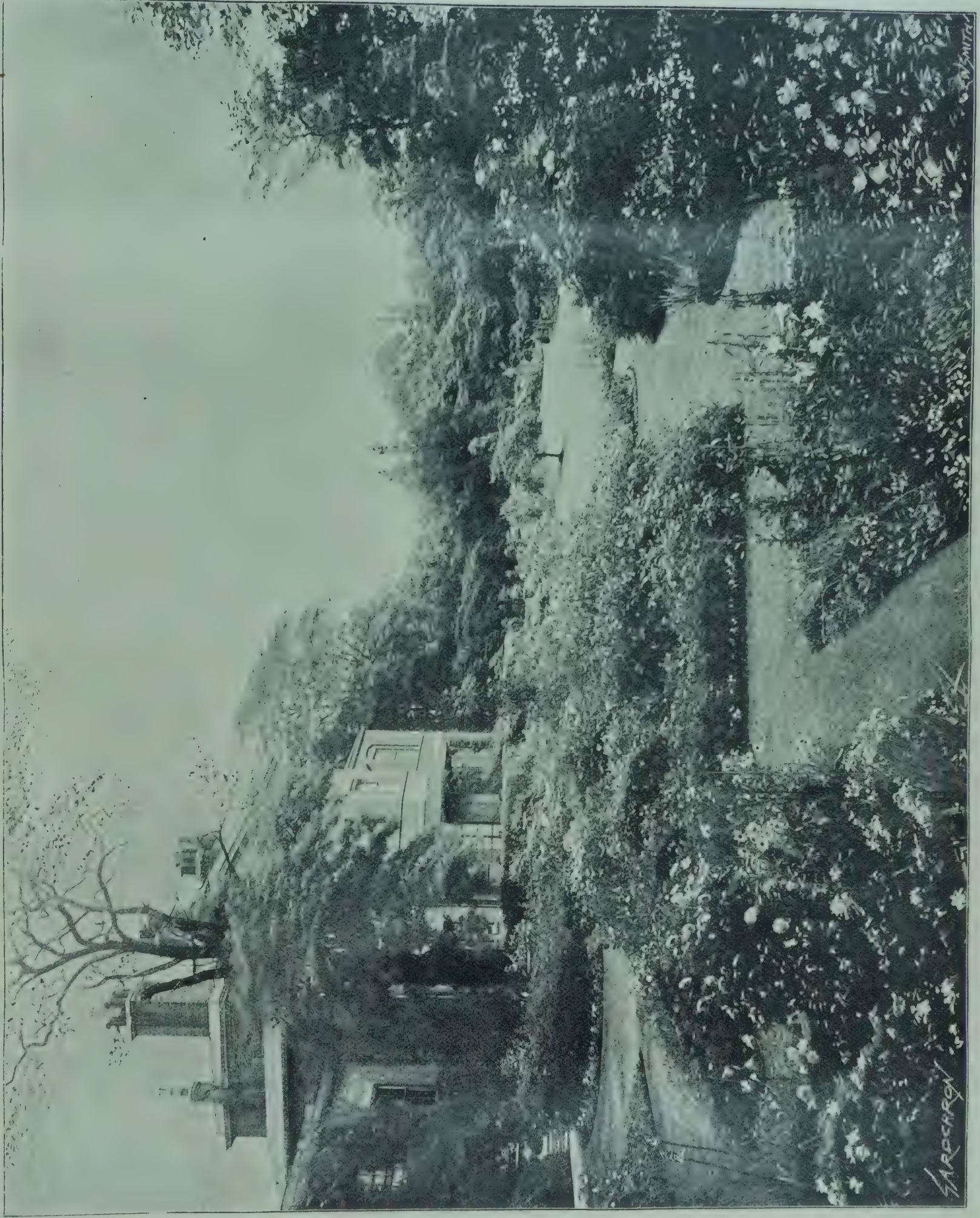
EUCALYPTUS GLOBULUS IN CORNWALL.—According to the *West Briton*, there is now growing in the garden of Mr. CHARLES H. HEXT, at Polgwin, a specimen of *Eucalyptus globulus*, commonly known as the "Blue Gum-tree," showing quite a large number of seeds. For a tree of this kind to bloom and seed in the district is exceedingly rare, the gardener, Mr. FRANK POLKINGHORNE, never having come across a specimen, either in the neighbourhood or elsewhere. *Extracted from the "Pharmaceutical Journal."*

ADDITION TO EPPING FOREST.—A valuable addition has been recently made to Epping Forest in the presentation by Mr. E. N. BUXTON, Chief Verderer, of the picturesque vantage-ground known as Yardley Hill. "This (writes the donor) is a timbered ridge which projects into the Lea-valley basin, from which river its highest point is distant about 400 yards. It connects the outlying portion of the forest called Gillwall Lane with the main block near Hawkwood." The new piece of land is, in extent, about 28 acres.

CASHING CROSSED CHEQUES.—The *Pharmaceutical Journal* reports a case in which a trader cashed four crossed cheques for a customer. The endorsements were made out in some other name than that of the person desiring to change the cheque, and proved to be fraudulent. Before this was discovered the cheques had been paid into the bank and honoured. An action was entered against the defendant who cashed the cheques, on the ground of negligence. The Judge remarked that it was a very different thing to cash a man's own cheque and that drawn in favour of another person, especially when, as in this case, that person was the employer of the man seeking to cash the cheque. The Jury returned a verdict for the plaintiff.

PRESENTATION.—An interesting presentation took place at Upleatham recently, the recipients being Mr. and Mrs. NICHOLAS, the former having been for the last twenty-one years head gardener to the Earl of ZETLAND, at Upleatham Hall. The chair was taken by Mr. G. FROST, Mr. Nicholas' successor, who presented Mr. Nicholas with a black marble chiming clock, bearing the inscription, "Presented to Mr. Nicholas on his leaving Upleatham, by the inhabitants, October 7, 1898," and also bronze figures; and to Mrs. Nicholas a silver-plated tea and coffee service.

METROPOLITAN OPEN SPACES.—It is worthy of note, that as this great London expands its circumference, so the number of so-called "open spaces" increases. The latest of these to be placed on the record is that at Wandsworth—a piece of ground having been secured in that district, to be transformed into what will be known as Riverside Park, near the mouth of the Wandle. A second "space" is to be found in Kipling Street, in the rear of Guy's Hospital. This is much needed, the nearest playground being 2 miles distant, in Kennington Park. Going on to Lee, in Kent, we find that a proposition has been made to take land there, and also to purchase the Manor-house, with its lake and grounds. There are very many charming features in the grounds, and this would make a grand addition to our metropolitan health-resort.



A VIEW IN MISS SULLIVAN'S GARDEN, BROOM HOUSE, FULHAM.

VARIETIES OF MELONS: THEIR DURABILITY.—

There is no kind of fruit, varieties of which are more freely raised from seeds than the Melon. During half the year at least, fruits from seedling plants are exhibited at the Drill Hall for certificates. Occasionally this honour is won, but whether or not, a number of the varieties are known for a season or two, and little is heard of them afterwards. It is worthy of remark, however, that the variety William Tillery, shown by Mr. J. W. MILLER, of Ruxley Lodge Gardens, Esher, at the Drill Hall on Tuesday last, were certificated by the Royal Horticultural Society in 1879. Mr. MILLER raised it a year or two previously when at Clumber, and has cultivated it uninterruptedly since that date. Looking at the Royal Horticultural Society's list of certificated fruits, we think that there are few Melons now in cultivation that were certificated previous to 1879, though Victory of Bath and one or two others might be named. As is well known, William Tillery is a green-fleshed Melon of considerable size, and generally less round in shape than the fruits shown on Tuesday last. But considering it has been grown for so long a time, Mr. MILLER has kept it wonderfully true.

PUBLICATIONS RECEIVED.—*Flower and Fruit Farming in England*, II., by William E. Bear (from the *Journal of the Royal Agricultural Society*, vol. ix., part iii.)—*Work* (Cassell & Co., London), October 15.—*The British Bee Journal*, September 29 and October 6.—Royal Botanic Gardens, Ceylon: *Classified List of Seeds available for Exchange*, August 20.—*Annual Administration Report of the Forest Department, Madras Presidency*, for the twelve months ending June 30, 1897. This contains chapters devoted to:—1, Extension and Constitution of State Forests; 2, Management of State Forests; 3, Gross Yield and Out-turn of Forest Produce; 4, Financial Results; and 5, Forest Administration.—*Lecture and Articles on Irrigation in India, America, Egypt, and Australia*, by Robert Wallace (Edinburgh: Oliver & Boyd, Tweeddale Court).—*The American Florist*, September 17.—*Calendrier Egyptien du Jardinier et du Cultivateur*, par G. Delchevalerie.

STONELEIGH ABBEY.

WHEN in Warwickshire in August last, we welcomed an opportunity that presented itself to visit the fine old residential seat of Lord Leigh. This estate is near to Kenilworth, and not far distant from the towns of Leamington, Coventry, and Warwick. Stoneleigh has been in the possession of the Leigh family for very many years, and its history has been traced far earlier than this even. To those who would like to become acquainted with its remote history, we may mention that the Hon. Miss Mary Leigh, in the *Pall Mall Magazine* for November, 1896, contributed a most interesting article upon the subject, which clearly showed that the historical associations of Stoneleigh are unusually rich. It appears that King Henry II. gave Stoneleigh to the Cistercian monks. It was first possessed by the Leigh family in the reign of Bluff King Hal, when it was purchased by a Sir Thos. Leigh. Miss Leigh records the story, though without vouching for its truth, that the possessor of the estate during the reign of Charles I. was a giant, who finding a man upon a donkey trespassing within the park, lifted both man and beast and threw them over the gate. Whether as a reward for his superior stature or not we cannot say, but this extraordinary man was made a baron by his monarch.

Miss Leigh's account does not appear to agree exactly with that of the historian Camden, who says that during the Saxon and Norman days, Stoneleigh or Stoneley Holme, was Royal property, and that Henry II. founded there an Abbey for the monks. But Henry VIII. routed them, and gave the estates to the Duke of Suffolk, whose family ceased to exist in the reign of Queen Elizabeth. Then Sir Thos. Leigh, one of the Lord Mayors of London, acquired them.

The present Abbey was built by Edward, Lord Leigh, in 1720, and certain parts of it I believe are open to the inspection of visitors. Lord Leigh is particularly generous in this respect, freely giving permission for anyone to wander in either of the

large parks and in the garden. The charming grounds have in times past owed much of their beauty to the "Sweet and gentle river Avon," that lazily wanders through them, and very close to the south front of the Abbey. But time has wrought a change, and the beautiful feature of those days may now be almost attributed a nuisance. Its waters have been polluted by sewage, and in other ways, and it sometimes presents a black and pestilential appearance, though efforts are made to clean that portion of it, that included in the area of the estate.

Immediately prior to my visit some kind of poison had been permitted to reach the river, presumably from Coventry, and this had killed so many of the fish that men were engaged in taking them from the surface of the water. So bad was the smell from these, that for a time his lordship deemed it prudent to remove his household to Leamington. But after all, if one does not examine the state of the water too closely, the views of the river and its banks are most gratifying. In fig. 96 is reproduced a photograph that will convey to the reader some idea of this.

The parks cover some hundreds of acres, and in one of them there is a vast herd of deer. There is abundance of timber, and the Beeches and Oaks are predominant, though there are also many fine specimens of Sweet Chestnuts, Sycamores, Planes, and Birches. The parterre flower-garden is immediately to the west front of the abbey. It is formal, and there was no mixed planting, but the beds were well designed, and had a very gay effect. Particularly good were the Calceolarias, to the virtues of which Mr. Molyneux has lately drawn attention in these columns. On three sides the flower-garden is surrounded by an old stone wall. Turning round to the left, a very different view is brought to notice on the south side. There is a Grecian garden there, with beds and scrolls of Box-edging. There are Irish Yews, and the ground, slanting steeply down to the river, rises again beyond to wooded elevations. It is this view that convinces one of the antiquity of Stoneleigh. Everything appears to have stood still for a century, and the method of gardening, at any rate in the precincts of the Abbey, are such as to accentuate the antique appearance the more permanent features possess.

The conservatory has a span-roof and glass front, the other side resting on a wall some 15 feet high. Begonia fuchsoides was here growing most vigorously, and to a considerable height, flowering profusely. Tuberous-rooted Begonias, Ivy-leaved Pelargoniums, and other plants made the structure gay.

Walking now to the east of the Abbey we meet with a good specimen of *Sequoia sempervirens*; but the most wonderful object then within view, and, indeed, one of the most remarkable features of Stoneleigh, is the Ivy-bower. Three or four persons may walk abreast in this, and the old thick Ivy stems are as interesting as the bower is uncommon.

The herbaceous garden contains a fine lot of flower-producing plants, and is valued highly. The Montbretias were making a beautiful display of flowers. There is a Rose-garden, and in the centre of this is a fountain, of curious interest, from the fact that the stones that form the confines of the basin are each carved to represent some animal. From a fishing-house near to the Rose-garden, another pretty view across the river may be obtained, which at this point is the more attractive by reason of a pretty islet. Then, turning, there is an exceeding old Beech; it has been wired and nailed, so as to keep the bark upon it, but it is quite dead, and the woodpecker has commenced his work. Apparently it has been used for years and years as a family register. The names of Lord Leigh's family for a long time past may be found cut upon it. In this wilder or less formal part of the grounds was noticed another fountain; and near to this there have been planted several plants to Crimson Rambler Rose that will make a special feature.

Before leaving the out-of-door part of Stoneleigh, remark is merited by a fine tree of the deciduous Cypress (*Taxodium distichum*) (fig. 95, p. 320). It

stands near to an archway that connects the stable-yard to the Abbey. The tree is about 70 feet high, of slender build, much branched, but it has been a little damaged by high winds. If the reader turns to the illustration, he may see this tree as it appears in summer and in winter. A very old Cork-tree (*Quercus suber*), and an Oak planted by Her Majesty the Queen, 1858, also a pair of Wellingtonias planted at same time by the Prince Consort, are among the trees of interest.

THE KITCHEN GARDENS.

The ground utilised for the cultivation of vegetables and fruits is curiously divided, and it might be correctly described as forming three gardens. There is a fine quantity of wall-space, and it is profitably utilised for the growth of most kinds of fruits, including Peaches and Nectarines. Tomatos abound everywhere where plants can be put, and a large yield of this fruit from out-of-door positions is obtained each season. The vegetable crops were capital, but I was particularly struck by the appearance of the Seakale. There are cultivated 2000 crowns of this delicious vegetable, and apparently it is a peculiar variety. Mr. Martin, who succeeded Mr. Beddard a few years since as gardener at Stoneleigh, was once foreman to Mr. Beckett, of Aldenham House Gardens, Elstree, whose success in vegetable-culture is well known. It is not surprising, then, that at Stoneleigh, in addition to the main crop of Onions, there was a crop of the varieties Ailsa Craig and Lord Keeper, the bulbs of which were of exhibition size and quality. They were grown in soil from an old Vine-border, and were planted out from each other at distances of 1 foot.

I must not forget to mention the cordon Gooseberry-trees. They are a feature of Stoneleigh. The reader will begin to think the place has many features. It has. These cordon Gooseberries are exceedingly prolific, and old-fashioned as the method may be, it is one that might be imitated to advantage.

THE GLASS STRUCTURES.

The fruits cultivated indoors comprise Grapes, Peaches, Nectarines, Melons, Figs, Tomatos, and Cucumbers. There were good crops of Grapes and Peaches, and Nectarines were ripening abundantly. The Fig-house contained the varieties White Ischia and Brown Turkey. The crop of Tomatos in one of the houses was an excellent one, and the fruits were solid, of saleable size, and best "Perfection" type.

In the greenhouse, it was gratifying to observe a nice batch of plants in flower of *Asclepias curassavica*. This interesting but rarely-seen flowering plant is grown well by Mr. Martin. The other plants were ordinary ones, such as *Francoa ramosa*, *Achimenes*, *Agapanthus*, *Begonias*, &c.

In one of the plant-houses there is grown a fine lot of *Myrsiphyllum asparagoides*. Mr. Martin said he had recently cut 50 yards of the decorative growths of this plant. *Cyperus natalensis* and *Carex marginalis* are both useful decorative plants prized at Stoneleigh. There is a small collection of serviceable Orchids, and some specimen plants of *Epiphyllum* grafted upon *Pereskia* in 10-inch pots. Altogether the plant-houses are interesting and well maintained.

THE OLD GATEHOUSE.

This ancient structure, part of which is now utilised as the gardener's residence, is on the north side of the Abbey, and well within view. This gateway is said to have been built by Robert de Hockele, who died in 1349. Over the gateway is a large stone escutcheon bearing the arms of Henry II., placed there by Robert in memory of the founder of Stoneleigh Abbey. The building was originally used as a chapel, and the small arched confessional is in a good state of preservation. It is just one of the many features of Stoneleigh that impress the visitors with a sense of the antiquity and historical interest of the estate. A capital illustration of the gatehouse, and one representing part of the garden, with the fountain, was given in a supplement to the *Gardeners' Chronicle*, Sept. 20, 1890.

Lord Leigh recently celebrated his golden wedding. He is deservedly popular, and it is hoped he may yet live long to enjoy the place in which he has already spent so many years. R. H. P.

CONTINENTAL NOVELTIES.

MR. ERNST BENARY, of Erfurt, among many other novelties, offers the following:—

Candytuft, Little Prince (*Iberis coronaria princeps*).—A new dwarf variety from the beautiful Empress Candytuft. Though only half the height of the parent, say 4 to 6 inches, it forms massive spikes of large pure white flowers, which stand erect from the Wallflower-like foliage, and are grouped candelabra-wise round the main stem.

Aster Dwarf Mignon (Crimson-white).—Just as the leading classes of Asters, such as the Victoria, Chrysanthemum, and Pæony-flowered, have in the past given rise to dwarf-growing sections, so now the beautiful and extremely popular Mignon class has also produced a form with a low habit of growth. About 10 inches high, the plant branches just above the soil, and the elegant stalks bear a profusion of the same lovely and refined semi-globular flowers which are so highly prized in the tall Mignon Aster.

Dianthus Heddewigii, Queen of Holland.—A dwarf variety with white flowers.

Lobelia cardinalis atro-sanguinea, with deep blood-red flowers.

LAW NOTES.

STREDWICK v. THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE plaintiff sought, at the County Court of Hastings, on the 24th inst., to obtain from the Society certain sums awarded to him as prize-money at the November show, and withheld by the Arbitration Committee on the ground that though plaintiff exhibited as an amateur, he was not entitled to do so, as he was a dealer in plants, and issued a printed priced catalogue. The Judge upheld this decision, and non-suited the plaintiff.

HOME CORRESPONDENCE.

RED NECTARINE-PEACH.—We have grown trees of this Peach for many years under glass, and also on a south wall, and they have invariably produced good crops of excellent fruits. In general characteristics it resembles Bellegarde more than any other Peach I know of, though it is quite distinct therefrom. I have not hitherto tried it for very early forcing, but I am about to put into our early Peach-house a good-sized tree growing on a south wall. When looking through the gardens at Nutfield Priory, Redhill, Surrey, in the early part of last summer, I noticed a splendid tree of this Peach in a second-early house; it was certainly one of the best trained Peach-trees I ever saw. The whole surface of the semi-circular trellis in a house, about 40 feet long by 16 feet wide, was covered with fruit-bearing wood. The fruits were regularly dispersed all over the tree, and promised to be fine in size and colour. Mr. Moffat, the gardener at Nutfield, told me that it had never failed to produce good crops of fine fruit from being first planted. *H. J. C., Grimston Park, Tadcaster.*

SOME UNCOMMON NERINES.—In the autumn of 1893 I purchased from a leading firm at Haarlem single bulbs of four varieties of uncommon if not new varieties, of the beautiful, autumnal-blooming family of Nerine, known to the unlearned as Guernsey Lilies. These were named respectively, Nerine Novelty, *N. coruscans pallida*, *N. sarniensis insignis*, and *N. sarniensis carnea*. Some account of their development during the five years I have grown them may, I hope, be of some interest to those of your readers who grow and admire these most brilliant-flowered of autumn-flowering bulbous plants. The first to bloom of the above-named four varieties was Novelty, which is now flowering for the third time with me, and has increased so rapidly that the single bulb has developed into a good potful of more than a dozen bulbs, which are now producing a dozen fine spikes just coming into flower in my cool greenhouse. The heads of bloom are comparatively small, bearing from six to eight flowers, each of a pleasing shade of light rose colour. This is by far the freest blooming variety known to me, and should be in

every collection. *N. coruscans pallida* bloomed for the first time last year, producing a single spike, and is now again in flower with two spikes, and is considerably better and brighter than it was last year. The heads are large, bearing fourteen flowers, which are of a brilliant shade of orange-scarlet. It is a most beautiful variety, but is, I think, somewhat inaptly named *pallida*, as it has nothing whatever pale about it, though it may be paler in shade than its type form, which I have not in flower to compare with it. *N. sarniensis insignis* is blooming now for the first time with me, and has one good spike, bearing eight large flowers of a most beautiful shade of deep rose colour, with a clear white centre. This is most correctly named, as it is a marked improvement in every way on the type form, the best known of all as the common Guernsey Lily. The fourth variety, *N. sarniensis carnea*, has not yet bloomed with me, and I fear I shall have to wait another year before I can see what the bloom may be. Another fine hybrid form, and the latest of all to bloom is *N. Manselli*; it is only now showing its flower-spikes, but when in full bloom it is very handsome, and also free-blooming, as my potful of bulbs is now showing seven flower-spikes, which will not expand for another fortnight. *W. E. Gumbleton.*

CROCOSMIA IMPERIALIS.—Mr. Wolley Dod's experience with this plant in wet peat is of much interest (see p. 307), but I would like to know if he finds this species hardy under the conditions he affords it. It is, as I know, a splendid thing when grown in a pot in the greenhouse. It has hitherto been too scarce with me to try it outside. A fine batch of seedlings which I have raised this year look likely to flower next year, but it is, as yet, too good a plant for me to risk any of them out of doors just yet. *W. H. Divers.*

GAURA LINDHEIMERI.—Allow me to recommend this to all gardeners who do not already grow it. It is of the Willow-herb tribe, with large pure white flowers, and slender spreading branches. A native of Texas, it cannot stand the stormy cold of winter at Edge, but is treated here as an annual from cuttings, which strike readily in September and October, and may be kept through winter, several in a pot. Planted out in April, it begins to flower in July, and continues to grow and flower till stopped by hard frost in November. At this date (Oct. 24) plants of it are 5 feet high and as much across, and are covered with flowers and buds. It is not exacting as to soil or situation, and only wants room to spread. As an annual from seed, it begins to flower later, but does well so treated. *C. Wolley Dod, Edge Hall, Malpas.*

CACTUS DAHLIAS.—I am reminded by the interesting and seasonable notes on Cactus Dahlias, in your issue of the 22nd inst., of the claims some of the good bedding varieties have on our notice. I am aware the present season has been favourable for the production of good flowers in quantity, and I do not know a plant requiring less attention, or costing less care to keep the roots through the winter months. One variety especially which we have grown here for several years—a bright, rich scarlet, named Rising Sun, very dwarf, and sturdy in habit, and a profuse flowerer—has given great satisfaction, and this season was planted in a long scroll-bed on a sloping bank of turf near the mansion, the bed being edged with *Centaurea candidissima*. The bed contains about 220 plants, standing at about 18 inches apart, and the bed was prepared in the usual way as for Pelargoniums. The position is much exposed; the plants have not had a stake placed near them. They were planted in the first week in June, and since the end of the following month it has been a splendid bed, the admiration of everyone who has seen it; and at this date (October 24), after a week of stormy weather, it is still bright and good. I would ask what other flowering plant would give such a result under such conditions as have prevailed? We require more of these very dwarf-growing varieties. I obtained it from Messrs. Wm. Clibran & Son, Oldfield Nurseries, Altrincham, some years ago. *Bailey Waddes.*

CHRYSANTHEMUMS WITH AERIAL ROOTS.—A remarkable occurrence of Chrysanthemums forming aerial roots has recently come under my notice. On visiting Mr. Shoemith's nursery at Woking, he pointed out a plant of the variety "Modesto" which had emitted roots all up the main stem, which was 5 feet high. They were about a quarter of an inch in length, and produced in such profusion as to be most noticeable. I have frequently seen roots above the surface for some distance, but never to the

extent as in this case. It would be interesting to know the cause of this phenomena, but it is probably due to the warm, moist atmosphere of the house in which the plants are growing. *E. S., Woking.*

A FLOWER-WALL.—The engraving of a flower-decorated wall at Glendavagh, Teignmouth (p. 289), reminds me how Mr. Burbridge has utilised a wall for the growth of alpine in the Trinity College Garden, Dublin. Some years since it was necessary to put up a low wall to hide some corners utilised for garden-refuse. To make this ornamental, and perhaps create a little novelty, Mr. Burbridge so arranged the crest of the wall that numerous hardy plants quickly found a home, and flourished there. The best patch of Edelweiss I have seen was there growing; also numerous Saxifrages and Aubrietias, so far as my memory serves. *E. M.*

THE CHRYSANTHEMUM RUST.—The Conference recently held by the N.C.S. will undoubtedly lead to much good, and I should like to have taken part in the discussion, but was afraid I could hardly squeeze my say into the five minutes wisely limited to each speaker. I was particularly struck with the large attendance of growers, especially as it is only a few who admit that they are troubled with the rust. The various writers in the gardening journals inform us that they hear that the rust is rather prevalent. "Oh, dear no! they have not noticed it in their collection." Still, it was surprising to note what a large number at the meeting seemed to be deeply interested in the matter. During the past few weeks I have seen many collections, and in no instance have I failed to find the disease. Its course seems peculiar and erratic. One collection of about 300 plants was last year quite free from the rust, although the stock they were procured from was infected. This season new blood was introduced in the way of fresh varieties, and these are now clean, although obtained from a stock which was badly attacked last season; but, strange to say, a few of those which were clean last year have recently become infested with the fungus. In many instances the varieties which were badly attacked last year are almost clean this; whilst those that suffered but little then, are severely attacked this season. It was rather to be regretted that trade rivalry sprang up at the discussion. One member honestly stated that his collection was affected, and further said all trade collections were more or less contaminated, which was nothing but the truth in spite of the fact that some alleged that their stock was clean. During the season plants were sent out by all the more important trade growers which were affected by the fungus, at least, I received them as such; and further, I supplied hundreds of plants and cuttings which were more or less diseased to the members of the trade who attended the meeting; and when one trade grower alleges that the only varieties which he has diseased came from another grower, he is treating the latter unfairly, for if the disease is only in these plants it simply proves that it makes but little difference whether the plants are procured from an infected stock or otherwise, for this grower obtained plants from various other growers where stocks were "rusty." All the principal trade growers obtain large quantities of stock from each other every season. Mr. Wells says he can destroy the spores; many will incline to the opinion of Mr. Massee, that he cannot except by destroying the foliage. It is possible to treat the powdery matter so that it falls off, and also to prevent its spreading by rendering the foliage impregnable to contamination. As to the disease dying-out, I am afraid we cannot look forward with much hope to this. We have the Hollyhock and Potato diseases with us more or less every season, and so it will be with the fungus on Chrysanthemums. As to preventives, there does not seem to be any difficulty in getting the stock clean during the summer, for stocks badly affected during the previous autumn and winter got apparently quite clean during the growing season, but towards the autumn when the foliage is losing its vigour the brown spots appear and affect the whole plant. When once the disease has a good footing, all attempts to stay its spread seem to be useless, and the only chance of keeping it at bay is to commence with the syringing of the stools with some of the various remedies prescribed, and also dipping the cuttings before insertion, and the plants at every potting. Instead of syringing with clear or soot-water every day, use a fungus-destroyer once or twice a week. Every few days make a diligent search for the disease, and should it appear burn every bit of infected foliage, taking great care to gather it carefully, and putting it into a covered box in taking it

to the fire, so that no spores can float in the air. As to remedies, Mr. Wells gave one which he has proved to be good. The Bordeaux Mixture of sulphate-of-copper and quicklime is simple and effective, but care must be taken to use the purest sulphate-of-copper. The rust in Carnations is very similar to the one affecting Chrysanthemums, and it is giving much trouble to American growers, but the most effective remedy yet propounded is a decoction of arsenic. An ounce of this dissolved in a little alcohol, and mixed with 100 gallons of water, is the recipe, but it requires great care in using. That it is very efficacious I have proved. *W. J. Godfrey, Exmouth.*

Obituary.

GOTTLIEB GOESCHKE.—This celebrated raiser of new varieties of Strawberries died at Köthen, on October 10, in his eightieth year. Goeschke was one of the first gardeners to flower the *Victoria regia* in Europe, which he was enabled to do with the simplest means in 1853. The following varieties of Strawberries were raised by him in his nursery at Köthen, viz., *Deutsche Kron Prinzessin*, with erect-growing fruit; *Graf Moltke*, with amber-coloured fruit; the very hardy *Professor Liebig* (1879); *Koenig Albert von Sachsen*, the best of his raising, a great and regular cropper, and an unusually large fruit; *Zulu Koenig*, with reddish, dark-brown fruit; *Komet*, a variety of the Chilian Strawberry, obtained by him from Kriegsminister von Roon, an earlier-raised variety; the juicy *Teutonia*; *Garten-Inspektor Hooff*, an early, piquant-flavoured fruit (1884); *Schwarzer Prinz*, a dark-red fruit; *Weisse Dame*, with fruit of the purest white externally, and rosy-tinted pulp, of Pine-apple flavour; *Die Schoene Wienerin*, with long, honey-sweet, and very fragrant fruit; *Kaiser Nikolaus von Russland*, with fruit of a Raspberry flavour, which the raiser preferred to the variety *Koenig Albert von Sachsen*. Goeschke had, during the last twenty-five years, raised about forty varieties of Strawberries, in which his chief endeavours had been directed to increased productiveness, the size of the fruit, and, above all, the development of good flavour. It was exactly in these particulars that his services to horticulture were the greatest, in view of the number of productive but flavourless varieties raised, which were fast driving the older, better-flavoured ones out of the garden. *Extract from Moller's Gaertner Zeitung.*

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

OCTOBER 11.—*Present:* Dr. M. T. MASTERS (in the chair); Dr. H. Müller, Rev. W. Wilks, and Rev. Prof. G. Henslow, Hon. Sec.

Pear Leaves Diseased.—With reference to some leaves sent since the last meeting, Prof. William G. Smith (Leeds) reports as follows:—"The Pear leaves with rusty spots are attacked by a *Roestelia*, one of the group of *Uredineæ*. This fungus is one which completes its life-history on two host-plants. The leaves submitted are those of one host—the Pear. They bear two distinct kinds of rusty spots or areas—viz., smooth areas in which the leaf-tissue is almost normal, and swollen areas with the leaf-tissue is abnormally increased and full of starch. The smooth spots are studded on the upper surface with black points, the 'pycnidia' or 'spermatia'; as a rule, these were covered with a hardened film of what had been sticky masses of ejected conidia, generally blackened with smut or bearing saprophytic fungi. The swollen pustular areas also bore spermatia on the upper surface, and also partially developed aecidium cups embedded in the abnormally increased tissues of the lower half of the leaf. The imperfect development of these aecidia prevents me identifying the species of *Roestelia* exactly; it is probably *R. cancellata*. This fungus may also attack the fruit. The second host of this 'rust' is the *Savin* (*Juniperus Sabina*), and it would be useful to know if this or an allied *Juniperus* occurs in this garden, also if they were perfectly healthy. The rust is a common source of trouble, especially a form which occurs on Apple-trees. This latter is very injurious in the United States. American authorities advise removal of the second host, the *Juniper*, also the destruction of badly-diseased trees or branches. After these precautions are carried out, Bordeaux Mixture is said to give good results. It is used in two or three sprayings at intervals of eight to ten days, the first given as soon as the young foliage appears. It is also strongly urged to use varieties of Apples or Pears suited to resist the rust. These, of course, vary for different soils, and must

found out after making the necessary experiments in the localit where wanted."

Apple Diseased.—This was received from Mr. A. H. Pearson, Chilwell, Notts. Professor William G. Smith reports as follows:—

"The Apple sent me shows a 'fruit-rot.' The primary cause is a fungus (mycelium) present in all the discoloured areas, but I should like to see other specimens before saying definitely what is the species. Several fungi have the same action in discolouring and softening the fruit; most of them also cause it to crack. When the flesh is exposed, then the white and blue moulds present on the specimen make their appearance. They are common mould-fungi (*Penicillium glaucum* and a *Mucor*, probably *M. piriformis*), and are not the cause of trouble—at least, they have not yet been proved so by anyone. The primary fungus is the one which has to be dealt with by remedies. The best preventive is probably Bordeaux Mixture. It has been used in the United States, and results obtained appear satisfactory. The Mixture is applied as a fine spray; the first application when the young foliage appears, the second after the fruit has set, the third two weeks later, and perhaps a fourth somewhat later. In this case, where the Apples are grown under glass, much might be done to hinder the progress of the fungus by free ventilation and dry air. The Apple sent seems to be a fine-skinned sort, hence it is all the more susceptible to fungus attack."

Apple with "Glassiness."—The Apples received from Mr. J. Vert, gardener at Audley End, have a peculiar translucent appearance. This is due to water having penetrated the intercellular spaces instead of air. No fungus is present, but the cause of the transudation of water is not known. This glassiness is said to be highly esteemed in Italy.

Dahlias Crossed by Sunflower.—Mr. E. J. Lowe forwarded blossoms having a true *Dahlia* appearance, which he believes to be raised from seeds of a parent the issue of the above cross. Nothing, however, excepting a rather large disc appeared to indicate a cross. The relationship between a *Dahlia* and a *Helianthus* being relatively remote, any *à priori* probability of such a cross being effected is but slight. In experimenting it would be extremely difficult to prevent self-fertilisation, unless it be proved that the pollen is self-impotent in *Dahlias*.

Potato Decayed.—Samples were received from Mr. Veitch having peculiar outgrowths, and being much decayed within, probably from the attacks of *Peronospora*. They were forwarded to Professor William G. Smith for further investigation. Mr. Veitch described the presence of the disease as follows:—"It was first detected early in August, before we had much hot weather, and this is the only garden in the neighbourhood so affected."

Cure for the Lily Disease.—Mr. Horace Byatt, of the Grammar School, Midhurst, Sussex, writes to say that he has found flowers-of-sulphur to be an excellent remedy for this troublesome fungus. "In the autumn of 1896 I removed the sets of bulbs from the ground, and when they were somewhat dry I put them, a few at a time, into a large brown-paper bag, in which was a supply of flowers-of-sulphur. They were then well shaken until the powder got thoroughly into the crevices, after which they were planted. Last season they showed a marked improvement in the blossom-heads, which were weakly, though almost free from disease, and now I have the pleasure of seeing them perfectly healthy, with fine green stems and leaves, promising good blossoms, while the rest of the groups have not a single blossom."

Colours of Flowers and Drought.—Rev. W. Wilks made the following observations on the coloration of flowers of the present season. Similar changes were recorded in *Nature* last year by Mr. Hughes-Gibbs, of Tarrant Gunville, Dorset:—"All through the exceptionally hot weather of the end of July and August all scarlet flowers had a tinge of dull-brown in them, pink had a shade of orange, yellow was very yellow, white was creamy. This was very marked—e.g., in *Dahlias*. Thus, *Fire King* and *Sunset*, two ordinarily bright, clear, scarlet flowers, had a distinct dull-brown tint overlying and spoiling utterly the usual scarlet, so much so that, having been away from home the first three weeks of the heat, I thought on my return that the *Dahlias* must have somehow got wrongly named. But now the weather is cooler the bright scarlet has come back, and the dull brown tint has gone, and all is as usual. The only colour the heat seemed (to me) to suit was the salmons, and they have been very fine and intense, having a sort of glow added to them."

West Indian Junipers.—Dr. Masters showed specimens of a *Juniper*, native to Jamaica, which he had received through the kindness of Mr. W. Fawcett, the Government botanist of the island. This species had been referred to the *J. bermudiana* of Linnaeus, with which *J. barbadensis* of the same author is taken to be synonymous. On comparison the Jamaica *Juniper* is seen to agree very closely with *J. virginiana*, the so-called Red Cedar of the mainland of North America from Canada to Florida. This species furnishes the best "cedar" wood for pencils, and many beautiful forms of it are cultivated in English gardens. The resemblance of the Jamaica plant to the American is so close that Dr. Masters does not hesitate to include them both under the same name of *J. virginiana*. Dr. Masters also showed specimens and wood of the true Bermuda *Juniper*, received from A. Haycock, Esq. The history of this plant, which differs greatly from the preceding, was cleared up by Mr. W. B. Hemsley, in the *Gardeners' Chronicle*, May 26, 1883, p. 657.

Tomatos with Bulbiferous Stems.—Mr. Wilks exhibited specimens of Tomato plants, grown against a wall, which bore small bulb-like protuberances from the insertion

of leaves. From each proceeded a small leafy shoot. An anatomical examination showed that they were formed by an excessive growth of cortex and medulla, the fibro-vascular cylinder being somewhat enlarged as well. It was suggested that experiments should be made of growing the shoots from the bulb-like processes, to see if they would give rise to a perennial form.

OCTOBER 25.—The usual fortnightly meeting of the committees of this society met at the Drill Hall, James Street, Westminster, on Tuesday last. The hall was well filled with exhibits, including many interesting ones. Successful cultivation was well illustrated in the group of foliage plants from Sir HENRY TATE. Chrysanthemums were considerably in evidence, and there were many blooms staged, but better quality will probably be forthcoming. The remarkable absence of frost permitted the *Dahlia* cultivators to make several fine exhibits, which we should suppose will be the last this season. Miscellaneous exhibits before the Floral Committee were numerous, and a few new plants were presented to its scrutiny. The Fruit and Vegetable Committee were called upon to inspect very few novelties, and no awards were made, other than medals, by this body. There were several large collections of Apples and Pears, however, and by far the best of these was one from an amateur, viz., ROGER LEIGH, Esq., Barham Court, Maidstone (gr., Mr. Geo. Woodward). Mr. BECKETT, Aldenham House Gardens, Elstree, contributed some extraordinarily fine samples of Celery. In the afternoon, a lecture was delivered by Mr. GEO. GORDON, V.M.H., upon "Experimental Horticulture," in which he advocated the further development of trial-grounds worked on scientific principles.

AWARDS TO NOVELTIES.

The Floral Committee recommended First-class Certificates to *Dracenas Victoria*, and *Ptychosperma Sanderi*, and Awards of Merit to *Tea Rose Sunrise*, and *Chrysanthemums May Matthews*, Etty Mitchell, Nellie Brown, Baron de Veillard. *Soleil d'Octobre* and *Golden Queen of the Earlies*. A Botanical Certificate was awarded to *Ceropegia Woodi*.

The Orchid Committee recommended a First-class Certificate to *Cattleya Maroni*, and Awards of Merit to *Laelia Perrini leucophæa* and *Laelia pumila Colemanii*.

Floral Committee.

Present:—W. Marshall, Esq., Chairman; and Messrs. Jno. Fraser, Owen Thomas, H. B. May, R. Dean, George Stevens, W. Howe, Jas. Hudson, R. B. Lowe, Jas. Walker, J. D. Pawle, Herbert J. Cutbush, H. J. Jones, E. T. Cook, Geo. Paul, and C. T. Druery.

From Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, were sent sprays of some choice ornamental trees and shrubs, &c. Among these was *Rhus typhina*, the pinnate leaves of which were very richly coloured; *Prunus Pissardi*, *Acer virginicum fulgens*, a very deeply-coloured *Acer* of great decorative value. *Euonymus europæus* carrying numerous fruits, *Cornus sibirica*, the new but well known *Physalis Franchetti* and *P. Alkekengi*, *Azalea pontica*, several *Ligustrums*, *Eulalia zebrina*, and others, every one of which is valuable for the ornamentation of the pleasure grounds during late summer and autumn.

From H. J. ELWES, Esq., Colesbourne (gr., Mr. Lane), were shown several of his new hybrid *Nerines*; *Lady Carrington* (salmon-coloured), and *Miss Shelly* (pink) were very pretty.

There was a group of magnificent foliage plants shown by Mr. W. Howe, gr. to Sir H. TATE, Park Hill, Streatham Common, London, S.W. These were mostly stove species, though there were included several Bamboos. There were excellent specimen plants of *Codiaeums*, *Cordylines*, *Ferns*, *Asparagus* species, and other decorative plants. A nice plant of the rare *Platynerium Willincki* was included. The group which covered a large area upon the floor was remarkable for the well-cultivated plants of which it was composed, and well merited the Silver-gilt Banksian Medal awarded to it.

Messrs. J. HILL & SONS, Lower Edmonton, contributed an exhibit of Ferns in pots. Among these were noticed very fine specimens of *Pteris tremula Smithiana*, *Davallia Mooreana*, and other species; *Nephrolepis rufescens triplinatifida*, and several *Gymnogrammas* (Silver-gilt Banksian Medal).

Messrs. F. SANDER & Co., St. Albans, exhibited a plant of *Ptychosperma Sanderiana*, a graceful, unarmed Palm with pinnate leaves (First-class Certificate). Its light and graceful habit will render it suitable for table ornamentation.

Mr. WILLIAM BULL, 536, King's Road, Chelsea, London, exhibited three nice plants of *Ficus radicans variegata*; also half-a-dozen plants of *Maranta picta*, and a plant of *Dracena Victoria*, a broad-leaved variety of the type of *D. Lindenii*. The leaves are about three inches wide, and have wavy outlines, being beautifully variegated with yellow, especially in the older leaves (First-class Certificate). A Botanical Certificate was recommended to *Ceropegia Woodi* from the same establishment; it has small fleshy leaves mottled green and white, with numerous bulbils on the stem, and highly curious though inconspicuous flowers. Figured in the *Gardeners' Chronicle*, November 26, 1897, p. 358.

Mr. BULL had also a variegated *Mimosa* named *M. argentea*, the base of the leaflets are silver-coloured on the upper

surface, consequently this colour lines the mid-rib of the compound leaf.

Mr. G. W. PIPER, Uckfield, exhibited blooms and shoots of a new Tea Rose named Sunrise, and an Award of Merit was recommended. It has very pretty little buds, and in point of colour is exceedingly attractive. Some of the outer petals are cerise-coloured, but the blooms have shades of copper and bronze.

Mr. R. GULZOW, of Melbourne Nurseries, Bexley Heath, exhibited a large specimen plant of Anthurium crystallinum "Illustra," smaller plants of which were described on p. 293. This plant, exhibited in a wooden and glass frame, was exceedingly handsome. Plants of A. c. foliis variegatis were shown for comparison. The committee has not yet made up its mind whether the plant is distinct or not.

Blooms of single and double flowered tuberous Begonias were shown from the open field by Mr. JNO. R. BOX, West Wickham and Croydon. They were to represent the strain merely, and were very satisfactory.

Mr. H. B. MAY, of Dyson's Lane Nursery, Upper Edmonton, exhibited a miscellaneous group of plants, consisting of thirty Begonia Gloire de Lorraine, neat examples, in 48's, about 18 inches in height, by 15 in diameter, beautifully flowered and grown. These were arranged in three pyramidal groups. Around these were placed Bouvardias in variety, many small examples of choice Ferns, including Davallia fijiensis gracillima, a neat dwarf-habited species; Asplenium Mayi, several Nephrolepis, Adiantum Farleyense, A. fragrans, a charming Fern; Davallia hirsuta, Phrynium variegatum, several Codiaums, Carnation Mrs. Leopold de Rothschild, several Ericas, examples of the white Chrysanthemum, Mutual Friend; Ericas in season, and a generally varied collection of decorative plants. A Silver Flora Medal was awarded.

Messrs. JOHN WATERER & SONS, Ltd., Nurseries, Bagshot, Surrey, exhibited a group on the floor of exceedingly healthy-looking Conifers, just as they had been taken from the open ground, and the root-masses secured in matting; also a few examples of Osmanthus, including the variegated form of illicifolius—a pleasing exhibit of shapely, well-selected plants. We remarked a number of varieties of the useful Cupressus Lawsoniana, including a fine C. L. lutea, of fine tint; there were also Retinospora squarrosa, R. albo epica, R. obtusa stricta; the golden variegated Juniperus chinensis, in capital colour; Abies concolor, Cedrus Deodara albospecta; specimens of the handsome silver and golden Irish Yew; Juniperus japonica aureo-variegata, Thuja borealis argentea variegata, &c. A Silver-gilt Flora Medal was awarded.

Messrs. W. CUTBUSH & SON, Nurseries, Highgate, N., showed a miscellaneous group, consisting of Begonia Gloire de Lorraine, Skimmia oblata, Erica persoluta, the seldom seen E. verticillata major, with bright crimson flowers—a useful plant at this season; Pernettya macronata in variety, in a well-berried state; Nerine Fothergilli, and about a score of plants of Skimmia japonica, &c.

A. KINGSMILL, Esq., Harrow Weald, showed a number of well-berried shoots of Vitis heterophylla. This fruit is produced in slender bunches, and the colour, when ripe, as shown, being cerulean-blue; it is a particularly effective plant in a greenhouse. The leaf is trifid, and measures 3 inches in breadth.

CHRYSANTHEMUMS.

Many of the exhibitors had blooms or plants of Chrysanthemums, and numerous novelties were noticed. Mr. W. WELLS, of the Fariswood Nurseries, Redhill, Surrey, had a fine display of plants and blooms. The early-flowering varieties were well represented, masses of bloom being shown of the varieties Mychett White, Mychett Beauty, a good yellow flowering companion to the first-named; and Market White, a new one of great similarity, but a little different in petal to Mychett White. Market White has stronger stems, and is said to flower later, besides being a much better "doer." Jules Mary, a crimson September or October flowering French variety; Crimson Pride, Nelly Brown, a brownish-bronze sport from Ryecroft Glory (Award of Merit), and others were noticed. Of new Japanese varieties there were also several, including Mrs. White Popham, a large flower the exact colour of which is yet hardly determinable; President Noman, a smooth petalled reddish-buff variety; and President Bevan, with good petals slightly recurving at tips, &c. (Silver Flora Medal).

A fine lot of blooms, chiefly representative of novelties, was shown by Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham. Some of the best were Lionel Humphrey, a promising yellow ground Japanese, more or less marked with reddish-brown; Soleil d'Octobre, a very fine yellow Japanese, that will make a charming variety for October blooming (Award of Merit); General Paquie, Rayonante, a Japanese bloom with much quilled petals, very pale purple; Golden Queen of the Earlies, a rich yellow globular Japanese bloom with slightly curving petals (Award of Merit); Miss Nellie Pockett, Melusine, a white Japanese with rose-lilac markings, &c.

Soleil d'Octobre was also shown from Gunnersbury House Garden, Acton, by Mr. JAS. HUDSON, who had capital blooms (Award of Merit).

Messrs. H. CANNELL & SONS, Swanley, Kent, contributed a number of Chrysanthemum blooms, shown upon long stems, and interspersed with inflorescence of Polygonum polystachyum, sometimes called molle. The flowers of this Polygonum that have been shown from Swanley on several recent occasions have attracted much attention. We believe the plants have been planted in rich soil and grown liberally, thus the inflorescences are very fine. It is worth planting to afford blooms in October. Of Chrysanthemums, Messrs. Cannell had

good blooms and plants of Nellie Brown, the coloured sport from Ryecroft Glory, Lady Byron, Mme. Deblanc, a new white Japanese of some promise, Lady Ridgway, Mrs. White Popham, Kathleen Rogers, a seedling Japanese white, with long drooping petals, very promising, &c.

Mr. W. SPINK, Walthamstow, showed plants of some of the novelties, including Mons. Fatogen, a buff Japanese, President Bevan, Marie Calvert, &c.

Messrs. R. & S. COTTEBERT, Southgate, had plants of a good pink flowered decorative variety, known as Mrs. Wingfield.

Messrs. T. S. WARE, Limited, showed in company with a fine exhibit of Dahlias, a collection of early-flowering Chrysanthemum blooms.

Mr. W. J. GODFREY, Exmouth Nurseries, Devon, had a considerable number of Chrysanthemum blooms. He had Baronne de Veillard, a promising incurved flower, crimson with bronze reverse (Award of Merit); also Ettie Mitchell, a golden and reddish-bronze coloured decorative variety (Award of Merit), Mgr. Mathew, a good lilac-coloured incurved (Award of Merit). Amongst others were fine blooms of Le Grand Dragon, Autumn Glory, very pale purple, Japanese, &c. There were 23 Japanese and five incurved varieties in this exhibit.

Mr. ROBT. OWEN, Maidenhead, showed a collection of blooms, including Baronne de Veillard (incurved), Award of Merit. Thos. Singleton, a white incurved of some promise, and others, there being altogether about sixty blooms. There were two plants also of a golden yellow-flowered Japanese named Mrs. Winkeley Smith; the habit of plant and character of bloom recommend the variety.

Mr. W. L. Farmer, gardener to H. P. LESCHELLES, Esq., Windlesham, Surrey, showed a white sport from Reine d'Angleterre, and named Miss Mary Leschelles.

There were also several varieties from Mr. W. SEWARD, Hanwell, including Elthorne Favourite, a Japanese incurved purple with silvery reverse.

Another exhibit of Chrysanthemums embracing 24 Japanese varieties and 12 incurveds, came from Mr. J. Prewett, gardener to C. A. PEARSON, Esq., Farnham.

DAHLIAS.

The presence in large numbers of show, Pompon, and Cactus Dahlias, so late in the season as October 25, is certainly an unusual circumstance. The most finished collection of the pair staged came from Mr. S. MORTIMER, Farnham, and received the award of a Silver Flora Medal. It included no fewer than 120 show and fancy flowers, of excellent form and substance, and prominent amongst them, of the eighty varieties, were Miss Cannell, W. H. Williams, Shirley Hibberd, Mrs. Stephen Walker, Perfection, Shotesham Hero and Rosamond. But the Cactus varieties, of which thirty bunches, in twenty-two varieties, were staged, were even more remarkable, as many of the flowers were singularly good, very so were Starfish, Daffodil, Capstan, Mary Service, Britannia, A. J. Deal, Alfred Vasey, Charles Woodbridge, and Harry Stredwick; whilst Fusilier, Arachne, Mrs. Kingsley Foster, Lady Penzance, Bridesmaid, Harmony, and Mrs. Gordon Sloane, were excellent.

The other collection came from T. S. WARE & Co., Ltd., of Tottenham, who had quite a huge bank of flowers, and probably 100 bunches of Cactus varieties, as well as numerous small ones, Pompons and singles. If a little weakly arranged, they made a brave show, giving bright colouring. Of singles, very charming in diverse hues were Miss Ramsbottom, White Queen, Nance, Etherman, Eclipse, Mikado, Mauve Queen, &c. Of Cactus forms, Robert Cannell, Earl of Pembroke, Charles Woodbridge, Ernest Glassey, Leonora, Lady Penzance, Alanta, Mrs. F. Tell, Cycle, Matchless, Sylvia, Starfish, Harmony, and numerous others; and of Pompons, were capital blooms of Mary Kirke, Admiration, Charles Lockwood, Miss Elsie, Cranston Beauty, Salamander, and others. To this collection a Silver Banksian Medal was awarded.

It is not at all unfair or partial to aver that Cactus Dahlias stand ahead of all other outdoor or garden flowers at this season for quaintness and interest, as at exhibitions they are the most interesting and attractive.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. JAS. O'Brien (Hon. Sec.), De B. Crawshaw, F. Sander, H. Williams, J. T. Gabriel, H. J. Chapman, W. H. Young, E. Hill, W. Thompson, Ch. Winn, S. Courtald, H. M. Pollett, J. Douglas, T. W. Bond, and T. B. Haywood.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver Flora Medal for a very effective group, in which their hybrid Cattleyas and Laelio-Cattleyas well demonstrated their usefulness during the dull season. Among them were Laelio-Cattleya × callistoglossa var. ignescens, one of the brightest and handsomest flowers of the year; Cattleya × Wendlandiana (Bowringiana ♀, Warscewiczii ♂), and its companion, Cattleya × epicasta (Bowringiana ♀, aurea ♂), the one singularly like C. Bowringiana in growth, the other like a small C. aurea. Of the species and varieties there were some good forms of Cattleya labiata, C. aurea, and other Cattleyas; a plant of the graceful white Cologynne Veitchii; a nice pan of the pretty rose coloured Stenoglottis longifolia; a good example of the very dark-centred Miltonia vexillaria Leopoldi; the singular Catasetum fimbriatum, Odontoglossum Pescatorei, with an immense branched spike; pans of Cypripedium Charlesworthii; C. purpuratum and other Cypripediums, Oncidium Forbesii, Brassia Lawrenceana longissima, Gomeza recurva, &c. Other good things in the group were

Masdevallia × Asmodia (Reichenbachia × Chelsoni), M. × Imogen (Schlimf × Veitchiana), Cypripedium × Milo, C. insigne Sanderæ, the true plant; C. × enanthum superbum and C. × Harrisianum superbum, both old kinds, but worthy to rank with the best; and C. × Arthurianum pulchellum.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), was awarded a Silver Banksian Medal for a pretty group of well-grown Orchids, comprising the rare Laelia Perrini leucophæa, a white variety, with lavender-coloured tinge, and with the front lobe of the lip of a peculiar slaty-blue (Award of Merit); Cypserorchis elegans, with eight of its dense nodding racemes of cream-coloured flowers; the pretty C. × Winnianus, the pale pink Spathoglottis Veillardii; Laelio-Cattleya × The Hon. Mrs. Astor, a very pretty yellow-tinted hybrid; a fine plant of Cattleya labiata alba, with a three-flowered inflorescence; a singular form of C. eldorado, with flowers somewhat larger than ordinary, and pseudo-bulbs and leaves more like those of a small C. aurea, i.e., with compressed sides, and showing two edges; Cypripedium × Maynardi superbum, C. Godefroyæ leucocylum, C. × Arthurianum, and some good forms of Laelia pumila.

Messrs. STANLEY-MOBBS & ASHTON, Southgate, staged a good group, in which were varieties of Cattleya labiata, the best being the fine white C. l. Lewisii, with purplish blotch on the lip; some good examples of their fine strain of Laelia pumila, Cattleya Warscewiczii, C. Loddigesii, Laelia autumnalis, Oncidium cornigerum, O. trulliferum, O. tigrinum, &c. (Silver Banksian Medal).

HENRY GREENWOOD, Esq., Highfield, Haslingden, showed the original plant of Laelio-Cattleya × Henry Greenwood (C. × Hardyana × L.-C. × Schilleriana), which was awarded a special Medal at the last Ghent Show. This hybrid is one of the prettiest and most floriferous, flowering, it is said, during spring and autumn. The three flowered inflorescence had delicately-tinted, light-rose sepals and petals, and clear chrome-yellow centre, and rich maroon-purple front to the well-expanded labellum.

M. CHAS. MARON, Rue de Montgeron, Brunoy, Seine-et-Oise, France, showed his fine Cattleya × Maroni (velutina ♀, aurea ♂). The inflorescence bore seven very handsome flowers, each rather smaller in size than those of C. aurea, and having sepals and petals of a peculiar bronzy-yellow or old gold tint; the labellum, which preserved the outline of C. velutina very distinctly, having the rounded front lobe veined and tinged with bright rosy-crimson (First-class Certificate).

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr., Mr. W. King), showed Laelia pumila Colmani, a very large and handsome form, with bluish-white sepals and petals, the front of the labellum being marked with purple and rose colour (Award of Merit).

Messrs. F. SANDER & Co., St. Albans, staged a group of Orchids, set up with plants of their beautiful scarlet Acalypha hispida or Sanderiana, hort. Among them were a good example of the fine Cymbidium Traceyanum, with two spikes; the rare Masdevallia melanoxantha, with dark purple flowers having bright yellow tails; a good pan of Habenaria carnea, and another of H. militaris; a distinct form of Laelio-Cattleya × elegans, some good varieties of Cattleya labiata, C. Loddigesii, Phalanopsis Esmeralda, and their new Cypripedium × John Carder.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. J. Davis), showed Cypripedium insigne Glebelands var., a clear yellow form with indistinct markings in the upper sepal.

WALTER COBB, Esq., Dulcote, Tunbridge Wells (gr., Mr. J. Howes), sent Cypripedium insigne Cobbianum, a yellow variety, similar to that shown by Mr. J. Gurney Fowler.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent Angrecum Germinyanum, a singular species, with long narrow segments and funnel shaped white lip (Botanical Certificate); and the curious Satyrium longicaudatum.

W. A. GILLET, Esq., Fair Oak Lodge, Bishopstoke (gr., Mr. Carr), sent cut examples of fine varieties of Cattleya labiata, C. Warscewiczii, and Dendrobium Phalanopsis delicatum.

Mr. JAS. DOUGLAS, Edenside, Great Bookham, again showed his Laelia × Briseis (purpurata ♀, harpophylla ♀), which secured an Award of Merit when last shown. The plant bore a tall spike of pretty cream-coloured flowers, with slight rose tint on the narrow crimped labellum; also Cypripedium × macropterum (Lowii ♀, superbiens ♂).

Mr. WALTER GOODLIFFE, Cambridge Nurseries, Worthing, showed several plant of Cypripedium Io grande × Boxalli.

Mrs. CLORINDA ROBERTS, Rose Hill House, Ipswich, showed Cattleya elongata and C. labiata, grown on Clozone Orchid pots.

Fruit Committee.

Present: Philip Crowley, Esq., Chairman; and Messrs. T. F. Rivers, Geo. Bunyard, A. F. Barron, Jas. H. Veitch, A. H. Pearson, J. Wright, Alex. Dean, J. W. Bates, Geo. Woodward, Geo. T. Miles, Geo. Wythes, H. Balderson, F. Q. Lane, Jas. Smith, Geo. Norman, R. Parker, and Jos. Cheal.

The best exhibit before the Fruit Committee was undoubtedly one consisting of Apples and Pears from Mr. Geo. Woodward, gr. to ROGER LEIGH, Esq., Barham Court, Maidstone. This consisted of sixty dishes of Apples, and forty dishes of Pears. In such a collection, where every variety represented was shown in perfect specimens, it would serve no purpose to particularise them. If our readers wish to know what varieties Mr. Woodward cultivates with best success, the information may be obtained by reading our

report of the recent fruit-show at the Crystal Palace. The committee showed their appreciation of the merits of the exhibit by the Award of a Hogg Medal, the first that has been obtained by an amateur.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., had an exhibit of Apples, including a hundred dishes, many of the varieties were illustrated by fine specimens (Silver Knightian Medal).

Messrs. CHEAL & SONS, Lowfield Nurseries, Crawley, also contributed an exhibit of 100 dishes of Apples and Pears (Silver Knightian Medal); and Mr. J. Prewett, gr. to C. A. Pearson, Esq., Farnham, had an exhibit of about thirty dishes of Apples, and twenty dishes of Pears (Silver Banksian Medal).

Mr. W. Howe, gr. to Sir HENRY TATE, Park Hill, Streatham, showed three splendid bunches of Black Alicante Grapes. These bunches weighed 15 lb., and were cut from a Vine carrying eighty bunches. The berries were not large, but better finished ones could not be seen.

Mr. Geo. Wythes, gr. to Earl PERCY, Syon House, Brentford, showed a bunch of Banana fruits, under the name of "Syon House Cavendishi." It is described as a dwarf fruiting form of M. Cavendishi, the plant fruiting at a height of five feet. The Committee wished to see it again, there being a possibility that the plant has prematurely fruited on this occasion.

The perpetual-fruiting Strawberry St. Joseph, was again exhibited by Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea. The plants were in 3-inch pots, and were this season's runners. The flavour of the fruits was very good for the late date of season.

An exhibit of six fine fruits of William Tillery Melon was made by Mr. J. W. Miller, gr. to Lord FOLEY, Ruxley Lodge, Claygate, Esher. This variety was raised at Clumber by Mr. Miller, and named after the gardener then at Welbeck Abbey. It is a green fleshed fruit, and was certificated by the R. H. S. in 1879. Mr. Miller has cultivated it ever since.

Some fine samples of fruits of the true Passiflora edulis were contributed from Combe Abbey Gardens, near Coventry, by Mr. W. MILLER (Cultural Commendation).

Some good specimens of the fruit of Diospyros Kaki were shown from the gardens of the Rev. Canon ELLACOMBE, Bitton. These had been grown upon a south aspect wall out-of-doors, and without protection.

Mr. C. Herrin, gr. to the Lady LOUISA FORTESCUE, Dropmore, Maidenhead, showed good fruits of Braby's Late Gage, and Coe's Golden Drop Plums.

There were several varieties of Beet shown from Chiswick, where a trial has been made of them, and reference has already been made to them in these columns.

Mr. E. Beckett, gr. to Lord ALDENHAM, Aldenham House, Elstree, made an exhibit of some extraordinary roots of varieties of Celery. A Silver Banksian Medal was deservedly awarded.

NATIONAL CHRYSANTHEMUM.

The following is the Report of the Sub-committee entrusted with the Investigation of Sites, &c., and presented to a special meeting of the executive committee held at Carrs, 265, Strand, on Monday evening, October 17:—

"The circumstances which led to the appointment of the Investigation of Sites, &c.—Sub-committee commenced with the adjourned annual general meeting of members, held at Anderton's Hotel, on March 21 last; when, as recorded in the minutes of that meeting, Mr. J. W. Moorman proposed that certain resolutions he had drawn up be accepted as recommendations to the executive committee, which proposition was seconded by Mr. J. R. Chomley, and carried. These resolutions (three in number) are as follows—That a sub-committee of five members (exclusive of ex-officio members) be appointed to enquire:—(a) What places can be obtained for holding our future exhibitions, either by a subsidy as now, or in reliance on our own resources, to proceed on independent lines. (b) To closely examine the whole question of minor shows, with the object of ascertaining their advantages or otherwise to the society. (c) To fully consider the question of selling the floor-space, and to report the result of their investigations to the general committee, who shall formulate such recommendations to a general meeting of members, to be held on the first day of the November exhibition, and that no future fixtures be made before this date.

The above was unanimously agreed to, as a recommendation to go to the Committee for action. These resolutions were duly reported and read at a Meeting of the Executive Committee, held on May 11, when it was moved by Mr. J. W. Moorman, seconded by Mr. T. BEVAN, and carried:—

"That the consideration of the foregoing resolutions be referred to a sub-committee of five members, in addition to the ex-officio officers, with instructions to report thereon."

It was further resolved in relation thereto:—

"That the report be presented to the Executive Committee as soon as possible." Also,

"That reasonable out-of-pocket expenses be allowed the sub-committee in making the necessary investigations."

Your sub-committee met on June 20, and resolved, "That in any applications made to likely places as sites for the Society's shows, it should be on the basis of four shows in each year, viz., in September, October, November, and December."

The following were mentioned as likely places in which accommodation for the Society's shows might be found:—

THE AGRICULTURAL HALL, Islington.

THE CRYSTAL PALACE, Sydenham.

THE LONDON EXHIBITION, Earl's Court.

OLYMPIA, Kensington.

THE QUEEN'S HALL, Langham Place.

THE IMPERIAL INSTITUTE, South Kensington.

THE NORTHAMPTON INSTITUTE, Clerkenwell.

The Secretary being instructed to communicate with the secretaries and managers of the foregoing places, to enquire as to the extent of the accommodation afforded, with dimensions of halls; whether three days' exhibitions could be held; whether tabling could be at the disposal of the Society; and the charge for the whole—say for four days.

It was also resolved that an advertisement in the *Daily Telegraph* and *Daily Chronicle* newspapers be inserted, for a central hall of large size, for the purposes of the exhibitions to be held in 1899.

The advertisements brought but one response—that from the secretary of the Public Hall at Peckham—much too small for the purposes of the Society.

With the exception of Olympia, which your sub-committee were informed could not be had, as the large show hall had been disposed of for other purposes, the whole of the foregoing places were visited by deputation, and the following results arrived at:—

THE AGRICULTURAL HALL is not available, because exhibitions are provided for up to the end of 1899, and the shows of the National Chrysanthemum Society could be held there during that year only in the event of one of those falling out, and this could not be definitely made known until April next.

THE EXHIBITION BUILDING at Earl's Court is also not available in 1899, owing to the whole of the space being required for the Colonial Exhibition in that year.

QUEEN'S HALL.—In reference to the Queen's Hall there is about 3600 superficial feet of open space; and after deducting gangways, it would leave about 2000 superficial feet space for show purposes. There is space under the galleries, but artificial light would be necessary all through the day. The rate of hire of the Queen's Hall is heavy owing to its being so much in request for concert purposes; the restrictions are severe, and there would be probable charges for dilapidations. The Queen's Hall was therefore abandoned.

IMPERIAL INSTITUTE.—At the Imperial Institute there is a long north gallery, 700 feet in length, by 25 in width, but difficult to reach, because several of the Indian galleries have to be passed through on the way. Lavatory accommodation is also deficient. The sum of £50 per show would have to be paid as rent; and there would be a charge for lighting also, about 14s. per hour. The place your sub-committee regarded as unsuitable, and the terms prohibitory. Your sub-committee therefore conclude that the Imperial Institute as a site for the shows of the society was out of the question, upon the terms above offered.

THE NORTHAMPTON INSTITUTE.—This is situated in St. John Street Road, Clerkenwell, and near the Angel, at Islington. It is a social and educational institution, with commanding premises, possessing a large hall, 100 feet by 67 feet, with a spacious platform, 41 feet by 39 feet, and a portion of the back of the gallery, running round three sides of the building, could be occupied by exhibits. The area of the hall, which could supply about 1900 superficial feet of tabling, would be too restricted for any one of the exhibitions of the society. A spacious gymnasium might be available, but a licence would have to be taken out to use it. The institute is situated at a considerable distance from any railway-station, and though in a main street, there is no line of omnibuses or tram along it; the nearest point of 'bus traffic being some few hundreds of yards away. It is therefore, difficult of access. There are certain restrictions, also: no intoxicating drinks can be sold; no smoking or profane swearing allowed. The Committee felt that the Northampton Institute could not be entertained as a site for the Society's shows.

THE ROYAL AQUARIUM.—A deputation waited upon Mr. RITCHIE, the Chairman of the Board of Directors of the Royal Aquarium, to consult as to arrangements for the future.

Complaints were made as to deficiencies in lighting the building; Mr. RITCHIE assuring the deputation that the Directors would take reasonable steps to secure a good lighting of the building.

In reference to facilities for judging, Mr. RITCHIE is willing to rope off the whole of the two side galleries, while the flowers staged there are being judged.

In reference to any augmentation of the sum annually allowed by the Directors towards the prize-schedule—namely, £300—it was pointed out that an additional £30 was offered this year in the November schedule. Mr. Ritchie said that if the National Chrysanthemum Society would undertake to enter into a guarantee to carry out a series of four exhibitions annually for the space of three years, the Directors would be willing to consider the matter of adding to the annual grant towards the prize-list. Further, Mr. Ritchie stated, the Directors would be pleased to place before the new refreshment contractors the National Chrysanthemum Society's wishes for special terms for luncheons, dinners, and drinks at the bars.

Subsequently the Secretary was instructed to request the Directors to endorse the preceding points, by appending their signatures to them; and also "to state what sum they are willing to give for a series of four or less shows in 1899, setting forth the amount they will give to each show; also to state what they are willing to give per show for four or less shows, for the space of three years, should the committee be willing to enter into an agreement with the Directors to hold shows at the Aquarium for that number of years."

To that request the following reply was received:—

Royal Aquarium, Westminster, S.W., Sept. 20, 1898.

RICHARD DEAN, Esq., Secretary, National

Chrysanthemum Society,

DEAR SIR,—In reply to your letter of the 20th inst., received on the afternoon of the 22nd inst., which I duly submitted to my Board, I am instructed to say that we confirm the conclusions arrived at, at the interview with the Investigation of Sites Sub-committee, and the subsequent one with Mr. Ballantine and yourself, on the following points, viz.: 1. That the Directors will take reasonable steps to secure the good lighting of the building.

2. That we will give better facilities for the judging at the November show, by roping off the galleries, subject to representatives of the Press being admitted, and to the judging being completed by 1 o'clock.

3. That we will make representations to the refreshment contractors to endeavour to secure your members favourable terms for dinners, &c.

With regard to your questions as to what amounts my Board are definitely prepared to offer for one, two, three, or four, or a less number of shows for the year 1899 and subsequent years, my Directors feel that, on consideration, your committee will see that it is not fair to ask them to categorically answer the questions, unless you are prepared to say that, subject to terms being arranged, you are willing to continue your exhibitions here.

On receipt of your assurance on that point, I am instructed to say that my Directors will be pleased to make propositions, which they think will be satisfactory to your committee.

I am, dear Sir, yours faithfully,

J. W. WILKINSON, Secretary.

CRYSTAL PALACE, SYDENHAM.—A deputation from your sub-committee waited upon Mr. H. Gillman, the general manager, at the Crystal Palace, with a view of ascertaining upon what terms the shows of the society might be held at Sydenham. Mr. Gillman made an offer of the following terms for 1899:—

For an October Show	... £75.
For a November Show	... £175.
For a December Show	... £50.

To set apart the grand central naves for the shows; provide the necessary tabling; arrange a room for the meetings of the Floral and other committees; supply the necessary admission tickets for members, and for the representatives of affiliated societies.—Will supply admission-tickets at half-price.—Would favour the provision of a 1s. 6d. ticket, which would give transit from London to the Palace and back, with admission to the building; so that the sum may be divided in three equal shares between the Crystal Palace, the Railway, and the National Chrysanthemum Society.—Will permit floor space to be let for miscellaneous exhibits.—Will provide plants to decorate the show-tables if required.—Will do the whole of the bill-posting at the expense of the Crystal Palace.—Will do all the advertising with the exception of that in the gardening papers, as at present.—Will endeavour to arrange for a supply of refreshments in the building, on reasonable terms.—And will also take steps to arrange for a cheaper and quicker train-service to and from the Palace.

In reply to a request as to whether the sum named for the November show could be augmented, Mr. GILLMAN said he thought that the arrangement should be tried for one year, and then be re-considered.

No Dahlia exhibition to be held by the National Chrysanthemum Society, as the National Dahlia Society holds its exhibition annually at the Crystal Palace.

Your sub-committee hold that the greater ground floor-space afforded at the Crystal Palace, the better light by day, added to the greater freedom from noise, which is objectionable to some at the Royal Aquarium, constitute advantages which go a considerable way in the direction of meeting the objections to the present place in which the exhibitions of the Society are held, which have found expression in various ways. Your sub-committee, having given due consideration to the foregoing particulars, have decided by a majority to make the following recommendation to the Executive Committee:—

That the terms offered by the Crystal Palace Company for holding three exhibitions in 1899, be accepted, subject to details being found satisfactory. For the foregoing resolution there voted:—

P. WATERER,	Chairman.
T. BEVAN.	
D. B. CRANE.	
J. W. MOORMAN.	Six in number,
J. T. SIMPSON.	
A. TAYLOR.	
Against the resolution:—	
R. BALLANTINE	One.

The other matters referred to the Executive Committee as recommendations, are:—(b.) The advantages or otherwise to the Society of the minor shows, i.e., exhibitions in September, October, and December.

This has not been considered fully by your sub-committee, because if their recommendation to the Executive Committee as set forth above, namely, to hold three exhibitions at the Crystal Palace next year, be adopted, then two of the minor shows will be provided for; that usually held in September will be dropped, a Dahlia show at the Crystal Palace being furnished by the National Dahlia Society. Your sub-committee, judging from past experience, consider the early date of the September exhibition operates to prevent the early varieties being represented in proper character.

In reference to recommendation (c), which deals in the first part with selling the floor-space, any decision in respect to this matter must, your sub-committee think, depend upon the arrangements ultimately made for holding the exhibitions of the Society in 1899. The proceeds from the letting of the floor-space is an important item in the income of the Society, and the practice of letting should not be abandoned without due consideration. The further matter of holding a general meeting of members on the evening of the first day of the November show rests with the executive committee, who are the best judges of its necessity or otherwise. Such a meeting can be called only in the manner prescribed by Rule 11, to the following effect:—

"A general meeting may be called at any time on a requisition signed by not less than twenty members of the Society, being delivered to the General Secretary, fourteen days prior to the date of the proposed meeting."

Such a meeting, if held, cannot in any way set aside any arrangement the Executive Committee may make in regard to any one of the three recommendations submitted to it from the annual general meeting, because they all relate to the shows held by the Society; and Rule 12 sets forth in the clearest manner that "The exhibitions of the Society shall be held at such times and places as the Executive Committee may from time to time determine."

Signed, T. W. SANDERS, Chairman; P. WATERER, Vice chairman; Thos. Bevan, J. T. Simpson, D. B. Crane, J. W. Moorman, A. Taylor.

OCTOBER 24.—A meeting of the Floral Committee of the National Chrysanthemum Society, took place on the above date, when a considerable number of blooms was staged, though owing to the incidence of the season many were ill developed.

First-class Certificates of Merit were awarded to decorative Chrysanthemum Mrs. Wingfield, a pretty and very free flowering variety of a soft rosy tint, from Mr. W. J. Empson, gr. to Mrs. WINGFIELD, Amphill, Beds; to Market White, a decorative Japanese, from Mr. W. WELLS, Earlswood; to incurred Ada Owen, from Mr. R. OWEN, nurseryman, Maidenhead; to decorative Mrs. Geo. Hill, and to Japanese Major Matthew, from Mr. H. J. JONES, Ryecroft Nursery Lewisham; to Japanese Mrs. W. Seward, from Mr. W. SEWARD, Hanwell; to Japanese President Bevan, Jules Mary, and Jeanne Mariet, from Mr. W. J. GODFREY, nurseryman, Exmouth; and to Japanese Mrs. W. Cursham, from Mr. H. WEEKS, Derby. Japanese Autumn Glory (Godfrey) was commended; and several varieties of a promising character the committee wished to see again.

EXETER GARDENERS' ASSOCIATION.—An interesting lecture, entitled "Flowers that Bloom in the Spring," was given by Mr. Andrew Hope at a meeting of the above Society on October 12.

THE "NEW PENNY MAGAZINE."—This is the latest publication of Messrs. CASSELL & CO., and those who remember the interest taken in the appearance of the original *Penny Magazine* will be attracted to it by the title. The present venture is to be on similar lines to the former one, but "adapted to the tastes and requirements of the present day." In sixty-six years these have considerably changed and developed, and for the sum that once purchased eight pages, sixty-four can now be obtained; smaller, indeed, but very full of both information and illustrations. The subjects treated of include "stories of adventure, thrilling records of gallant deeds, vivid pages from history, anecdotal accounts of novelties, curiosities, and famous personages, and graphic descriptions of Nature's most wonderful scenes." Add to this fiction, in the shape of short and serial stories, and it must be admitted that the *New Penny Magazine* is quite as well worth its price nowadays as was its predecessor half a century ago, though necessarily wanting in *prestige*, and perhaps not quite so high in tone.

NOTICES TO CORRESPONDENTS.

ADDRESS: *Johannes Rafn, Denmark.* The *Canadian Horticulturist* is published at Toronto, Ontario, at the price of 10 cents per copy, or \$1.00 per annum.

AQUATICS SUITABLE FOR PLACING IN AN OUT-OF-DOORS POND: *Subscriber, East Grinstead.* Hardy Nymphæas, especially *Marliac's* varieties, *Butomus umbellatus*, *Villarsia nymphæoides*, *Calla palustris*, *Aponogeton distachyon*, *Iris pseudo-acorus*, *Hottonia palustris*, *Pontederia cordata*, *Nuphar advena*, *Menyanthes trifoliata*, *M. nymphæoides*, and many others.

BOOKS: *P. & Sons, Chesterfield.* *Handy Book of the Flower Garden*, by D. Thomson, published by Blackwood & Sons; *Hardy Herbaceous and Alpine Plants*, by W. Sutherland (Blackwood & Sons).

CANDIDATES FOR HORTICULTURE: *J. H. M.* You should apply to the Secretary of the Royal Horticultural Society, 117, Victoria Street, Westminster,

S.W.; or to the Principal of the College of Horticulture, Swanley, Kent.

CARNATIONS: *K. I. T. T.* The blooms are being destroyed by damp in the atmosphere, or by drip, or overhead syringing. Can you not employ fire-heat by day, with abundance of air occasionally.

CLEMATIS: *N. A. S.* The pruning of the Clematis lanuginosa group, which consists chiefly of weak growers, should be of a very slight nature, and done after the flowering of the plant is over. The Jackmanni group, which flower on the young growth, may be pruned in January and February; and the Patens group, which flower on the old wood, may be pruned more or less severely after flowering. Besides grafting on stocks of *C. vitalba*, established in large or small 60's, and mostly raised from seed, cuttings can be successfully employed when these are taken with a heel from plants forced into growth by means of warmth. The cuttings need a warmth in the bed of 75°, and in the air of the house a maximum of 60°. The length of a cutting should not exceed 6 inches.

FUCHSIA: *E. B.* The condition arises from the fusion of two flowers, and is not uncommon.

FUNGUS ON FOLIAGE OF APPLES AND PEARS: *Alpha.* The fungus having continued to spread shows that the dressing was not sufficiently strong, or had not been applied several times, as it always should be. Usually, three dressings of the Bordeaux Mixture, after the fruit is set, are sufficient for the season, the last being applied at least three weeks previous to any of the fruit being consumed; indeed, it is better not to use it on fruit nearing the full size, so much more copper being deposited on a fruit, and it is well to be quite safe. The following is a good formula for Bordeaux Mixture:—Copper-sulphate, 4 lb.; fresh unslaked lime, 3 lb.; water, 40 gallons. Place 6 gallons of water in a wooden tub or barrel (never use iron or tin), and hang in it 4 lb. of pulverised copper-sulphate in a coarse canvas bag. Slake the lime, adding water only as fast as it takes it up, and pour together. Before using, dilute to 40 gals. Enough lime should be added to neutralise the free acid, for if this be not done, the foliage will be injured by it. To test this, buy a pennyworth of ferro-cyanide of potassium (yellow prussiate of potash), and place in a small bottle of water. Add a few drops of this solution to the Bordeaux Mixture before it is diluted, and if it turn it brown the lime is deficient, and more must be added until the ferro-cyanide has no effect. A slight excess of lime is generally desirable. When much Bordeaux Mixture is used, a stock of it can be made by putting 40 lb. of copper-sulphate in 40 gallons of water, and in a box slake 40 to 50 lb. of lime. When needed, measure out 4 gallons of the mixture, and add some of the slaked lime until no brown colour is made when tested. The mixture will be ready when diluted. This is as strong a mixture as it is desirable to use, and after the first application 60 gallons of water may be used, instead of 40 gallons, for the 4 lb. of sulphate of copper and 3 lb. of lime. If the mixture be strained through fine canvas, it can be applied with a syringe or a sprayer. Washes made with caustic soda are of no effect against the fungus, but are effective against insects, especially scale, with soft soap or with resin or Barbadoes Aloes. As much as 2 lb. of soda may be added to 1 gal. of water.

GALVANISED IRON ARCHES FOR CLIMBING ROSES: *W. P.* In view of the injury sometimes occurring to the rind from contact with the raw iron, it is prudent to apply two or three coats of paint, the first of red lead, then one of white lead, and the last of some shade of green or chocolate-brown.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—*C. W. S.* Apple, pale yellow, believed to be Queen Caroline. The other, with the curious malformed fruit, is Rymer.—*J. O.* 1, Grosse Calebasse; 2, Comte de Lamy; 3, Beurré Bachelier.—*Philomathus.* 1, not known, worthless; 2, Ecklinville Seedling; 3, Rymer; 4, Cellini; 5, Doyenné Bous-

soch; 6, Flemish Beauty.—*C. N. M.* Pear, closely resembles Duchesse d'Angoulême, if melting.—*H. C. W.* 1, Warner's King; 2, Beauty of Kent; 3, Yorkshire Greening; 4, Reinette Blanche d'Espagne; 5, Reinette du Canada; 6, Dumelow's Seedling.—*W. R. F.* Apple, Warner's King.—*B. W. Solon.* 1, not known; 2, Court Pendu Plat; 3, Cellini; 4, Blenheim Orange; 5, Sturmer; 6, Court of Wick.—*H. G. C.* Apple, Edmund Jupp, an Apple much grown in parts of Sussex.—*An Anxious Enquirer.* 1, Doyenné Boussoch; 2, Marie Louise d'Uccle; 3, Pitmaston Duchess; 4, King of the Pippins; 5, Cox's Orange Pippin; 6, Cellini.—*Daniels Brothers.* Apple, New Hawthornden.—*W. B.* 1, Rymier; 2, Washington; 3, Court of Wick; 4, like Yorkshire Beauty; 5, Forge; 6, not known.—*G. W. S.* 1, Comte de Flandres; 2, not known; 3, King of Tomkin's County; 4, Emperor Alexander; 5, Dumelow's Seedling; 6, Blenheim Orange.—*N. S. Margetts.* 2, Beurré Superfin; 4, Emille d'Heyst; 5, Durondeau; 6, Zephirin Grégoire.—*A. B. C. D. A.* Pear, Beurré Clairgeau; *B. C. D.* Forms of Blenheim Orange Pippin.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*A. C.* 1, Goldfussia isophylla; 2, Rudbeckia speciosa; 3, we cannot name the Aster, perhaps *A. dumosus*.—*No. 1.* Origanum Dictamnus.—*J. Davidson.* Physianthus albens.—*A. S.* We cannot tell from detached leaves without other evidence what your tree is. Probably a Crataegus of some sort, or it may be a Pyrus.—*Pickering* should not send fruits and plants in the same packet. The plant is Euphorbia Cyparissias. The Apples next week.—*H. E. G.* and *H. M. E.* Ruellia macrantha, figured in the *Gardeners' Chronicle*, January 12, 1895, p. 45, Oxalis Ortgiesii.—*M. M.* Odontoglossum crispum, ordinary variety.—*Kilmarnock.* Anthurium Scherzerianum, stove plant. It requires moist heat, and plenty of water when growing, diminishing the quantity when the spathes begin to show.—*W. B.* Juniperus virginiana.—*F. C. V.* Plumbago larjento.—*Miss S.* Echinops cephalotes, var. probably.—*H. T.* Polygonum polystachyum.—*J. B. Steele.* Your specimens are too poor.

PELARGONIUMS: *G.* With the exception of some herbaceous perennials, which are true Geraniums, all the plants grown in gardens under the name of Geranium, whether zonal or spotted, are really species or varieties of Pelargonium. This fact has been known for many years. There was also a "Pelargonium Society;" but in spite of that, the erroneous name Geranium persists, and is likely to do so. The Pelargoniums are all originally natives of the Cape of Good Hope; the Geraniums are European chiefly, and natives of cool, temperate climates.

SEEDLING APPLES: *Mrs. C. H., East Barnet.* The fruits appear to be good ones. You should exhibit several of each variety before the Fruit Committee of the Royal Horticultural Society. The next meeting will be on November 8, and the Secretary, to whom you should make application, is the Rev. W. Wilks, 117, Victoria Street, Westminster.

COMMUNICATIONS RECEIVED.—*C. Mathews.*—*E. J. L.*—*W. W.*—*W. G. S.*, Leeds.—*H. R. W.*, Nancy, under consideration.—*J. C.*—*S. E. S.*—*C. de B.*—*Mrs. H. G.*—*P. Collins.*—*A. Bateman.*—*C. Stauwell.*—*H. M.*—*E. J. L.*—*S. Abbey Wood.*—*H. T. M.*—*A. D.*—*G. B. M.*—*H. M.*—*R. L. H.*—*H. W. W.*—*H. C.*—*F. Fox.*—*E. S.*—*Messrs. Webb & Sons.*—*B. D. J.*—*Sec. Linnean Society.*—*R. J. L.*, with thanks.—*E. H. G.*—*S. E. S.*—*F. C.*—*J. C. M.*—*A. D.*—*A. J. W.*—*G. C.*—*W. W.*—*G. E.*—*Marjoribanks.*—*H. C. Z.*—*H. R. W.*—*A. A.*—*Mrs. H. Gibbs.*—*K.*—*H. T. M.*—*D. T. F.*—*W. C. W.*—*H. May.*—*W. W.*—*H. Coleby.*—*R. M.*—*J. Wilson.*—*T. Coomber.*—*H. M.*—*Foreman.*—*G. W.*—*S. G.*—*G. F.*—*S. E. A.*, Yorks.—*E. L.*—*T. W.*—*J. Pitts.*—*H. K.*, Dean Farm.—*T. B.*—*H. Joy.*—*E. J. Woodward.*—*Pickering.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*W. Crump.*—*H. J. Clinkaberry*, New Jersey.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see p. xii.)



THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 5, 1898.

PALLANZA.

FEW places in North Italy are so attractive to the traveller of horticultural bent as these two, perhaps the most beautiful spots on the Lago Maggiore. Their attractions are not at all similar. Pallanza is not only the most sheltered and warmest—the latter term seems absurd when sweltering in the fierce tropical blaze of mid-August!—spot on the lake, but it is the “home” so to speak, of one of the most interesting nurseries in Italy—that of the Fratelli Rovelli. This celebrated nursery is only a very small one, as nurseries go in England, and is probably not above 10 English acres in extent; but nearly every square yard has its interesting plant, tree or shrub. When Signor Rovelli established himself here in 1848, there was little of note about the place, except its unrivalled position; but a mere walk to-day through the place will demonstrate how much may be done in a spot on which Nature has lavished her favours. It is very difficult to realise that all these magnificent Firs and other trees are the growth of just half a century; yet such is the case, and, happily, Signor Rovelli can now contemplate in his mature years the work he so skilfully designed when quite a young man.

There is so much to see and to take notes of in this nursery that one hardly knows where to begin. In regard to extent, perhaps the Camellia plantation occupies a greater amount of space than any other one genus of plants; there are about two acres of various sorts, and during February, March, and April, the sight of this mass in full flower is said to be a magnificent one. The Rhododendron is another special feature with Messrs. Rovelli, the Sikkim, Himalayan, and almost all other kinds flourishing here at Pallanza with all the vigour that they do in their native habitats. The firm has raised a number of hybrids between *R. argenteum longiflorum* with *arboreum*.

One of the first things that strikes the visitor to the Rovelli Gardens is a magnificent specimen of the Silver Wattle (*Acacia dealbata*), which, in twelve years was grown from a small plant to about 40 feet in height, whilst 30 feet from the parent has sprung up from an underground root an offspring now almost as large as the original. The *Acacia* does extremely well here, and so also do the Bamboos, which latter are a leading specialty with Messrs. Rovelli, the varieties which appear to flourish most freely being *B. erecta*, *B. nigra*, *B. pygmæa*, *B. quadrangularis*, *B. mitis*, and, perhaps the most charming of all, *B. gracilis* (the Rovelli specimen of this is a beautiful tree 30 feet high), attaining in some cases to huge trees with very large trunks. The *Eucalyptus* is another

favourite plant in Italy, and some striking examples of *E. amygdalina* and *E. glauca* occur at Pallanza.

Of course, the Conifers are among the principal attractions of Messrs. Rovelli's place. They grow there with a vigorous rapidity, which is difficult to realise in this country. Amid an embarrassing number of rarities and of specimen-trees, perhaps the most noteworthy are the Golden Larch, *Pseudolarix Kämpferi*, and *Keteleeria Fortunei* (see *Gardeners' Chronicle*, May 3, and March 15, 1884, respectively). Both are magnificent specimen-trees, whilst the *Pseudolarix* was the first tree in Europe to produce flowers, just as the grand specimen at Pallanza is *il più forte esemplare conosciuto in Europa*. The *Keteleeria* forms a more handsome tree than the Golden Larch, it is much more symmetrical in outline, and the various main branches are less irregular. This is rather noteworthy, inasmuch as in its native country its aspect is said to be “peculiar rather than handsome.” The Rovelli specimen is unquestionably unique in Europe; it bears fruit nearly every year, and young plants are readily raised from seeds. Roughly calculating, I should say that both these specimen-trees are about 50 feet in height. The *Keteleeria* is about thirty years of age; its bark has a curious cork-like appearance.

The representatives of the genus *Abies* are both numerous and interesting. The most beautiful of all is, perhaps, *A. lasiocarpa*, of which there is a fine pyramidal-shaped specimen tree. There are also fine growths of the stately *A. Nordmanniana*; *A. bracteata*, a tall, slender, graceful tree, bearing numerous cones; *A. inversa pendula*, a curious “weeping” tree; and *A. rumidica*. Altogether there are about fifty species and varieties of the genus *Abies*, including some which technically belong to other genera, cultivated at the Rovelli establishment. The genus *Pinus* and its immediate allies find Pallanza an entirely congenial habitat. The Korean Pine, *P. koraiensis*, forms a small graceful shrub, and is bearing cones; several forms of *P. Montezumæ*, *P. insignis*, *P. longifolia*, *P. Lambertiana*, and *P. canariensis* are represented by specimen plants. Nearly every variety of *Cupressus* under cultivation is to be found at Messrs. Rovelli's, but the most noteworthy is a splendid tree of *C. torulosa*. There are also good specimens of *Cephalotaxus Fortunei*; of *Podocarpus chilina*; *Sciadopitys verticillata*, and of all Messrs. Rovelli's perhaps the finest and most perfect specimen tree in Europe; it is about 24 feet in height. *Librocedrus decurrens*, which in forty years has attained to about 80 feet in height; and *Cunninghamia sinensis glauca*. The *Araucarias* are also very much at home, particularly such species as *A. Bidwillii*, *A. Cunninghami*, and *A. brasiliana*, which in England are too delicate to be grown elsewhere than in a conservatory. *Prumnopitys elegans* flourishes into quite a large tree.

The genus *Quercus* is represented by one of the most distinct *Q. Mirbecki*; by an exceedingly graceful specimen of *Q. dealbata*, and *Q. suber*.

Palms and their allies of every sort and size are to be found in the open air all the year round here. An especially good plant of *Cocos australis campestris*, is quite 10 feet high; *Chamærops excelsa*, *Jubæa spectabilis*, *Brahea edulis* and *B. glauca* are represented, not merely by large stocks, but also by fine specimen plants in the open. The Laurel is another plant extensively cultivated in Italy, *Laurus glandulosa*

developing with great rapidity into a huge tree; *L. regalis* with its pear-shaped fruit and very fragrant leaves, and *L. camphora*, both flourish well. A magnificent specimen of *Olea fragrans* is also noteworthy, and both *Ilex japonica* and *Thea viridis* may be mentioned as producing fruit with considerable freedom. *Musa japonica*, also in the open, is showing both flower and fruit. Messrs. Rovelli have been making a special feature of this grand plant, and they find that it is not only quite hardy, but that it withstands 10° of frost if the surface is covered with dry leaves or straw; it commences to show signs of life in March or early in April, and the rapidity with which it develops into a graceful fully developed plant is altogether extraordinary. Two other plants, rarely successful in the open air in this country, flourish in all their native vigour at Pallanza, viz., *Bignonia grandiflora*, which in August was covered with its brilliant red flowers, and *Clianthus puniceus*. The rose and violet-coloured varieties of *Lagerströmia indica* may be seen here in a highly flourishing condition, the former with magnificent panicles of flowers.

There are very many other trees and shrubs which will detain the visitor, but to only a few of which can allusion now be made. One of the most noteworthy is a very striking plant of *Rubus leucodermis*, with white stems and branches, which have a distinct and curious appearance of having been whitewashed; *Pittosporum Mayi*, *Nandina domestica*, and *N. laciniata purpurea*, *Gunnera manicata*, *Euonymus citrifolius*, and *Arbutus Andrachne*, may all be mentioned as being ornamental shrubs and trees successfully cultivated for decorative and other commercial purposes at Pallanza. It is difficult to drag one's self away from such an interesting nursery as that of Messrs. Rovelli, where the horticultural visitor ever finds a courteous welcome.

Immediately opposite the nursery is the palatial building of the grand Hotel Pallanza, with its numerous *dépendances*, all finely situated, and all with charmingly laid-out gardens, or to be more correct, shrubberies or arboretums. The Grand Hotel was erected rather less than thirty years ago, and the grounds, which altogether cover probably several acres, were designed and planted out by Sig. Rovelli. The growth of the young trees has certainly been “fast and furious,” and if one were told that they had been established there for over a century, there would be no tax on one's credulity. I do not propose making an “inventory” of all the trees and shrubs in these gardens, but I have jotted down a few notes concerning the more remarkable specimens. A specimen plant of *Laurus nobilis* has over a dozen thick main branches springing from the same root-stock; the Loquat, *Mespilus* (*Photinia*) *japonica*, has not only developed into a huge tree, but has three large trunks springing from the parent root. Another very fine tree is called *Cratægus nepalensis*, but about which name there is, I presume, some mistake. *Buxus balearica*, a beautiful shrub, being, as it is, a native of this part of the world, thrives well; *Benthamia fragifera*, *Podocarpus Makoyi* (?), *Calycanthus præcox*, *Euonymus fimbriatus*, and a variegated form of *E. japonicus*, *Pittosporum sinense*, *Arbutus Unedo*, and *Viburnum lucidum* and *V. Tinus* are among the more striking growths in the gardens of the Grand Hotel, whilst the *Camellia*-tree flourishes and flowers with a luxuriance to be found perhaps nowhere else outside its native habitat.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

PTYCHOSPERMA SANDERIANA, n. sp.*

NEW GUINEA and the adjacent islands seem to be remarkably rich in elegant small Palms of the group of Arecinæ, and many have been described by various writers. Mr. Micholitz adds another of these beautiful cultural plants to the stoves of Europe in the form of this new and pretty plant.

It has a stem from 10 to 15 feet high, and 1 inch in diameter, with tolerably regular joints 1 to 3 inches long; the leaves over 4 feet long, with a rather slender rachis, which, especially at the base, is covered with a flocculent brown tomentum; the pinne are alternate, over fifty on each leaf, narrow, linear, a foot and a half long, and half-an-inch broad, tapering towards the point, the apex with one long point, and another much shorter, with a deep notch between them. The panicle hangs below the leaves, rather large and many-branched, the branches stout, 8 inches or more in length; the rachis is sprinkled with brown fur, like that of the leaves. The male flowers are borne in pairs, in sockets, arranged spirally. The calyx-lobes are short, rounded, and pubescent, gibbous at the base; the petals nearly twice as long, equal, blunt, and ovate. Stamens fifteen in number, hardly longer than the corolla. The rudimentary pistil is rather large and fusiform, ending in a bent style. The female flowers are borne on a different panicle. I have seen none. The fruit, however, has at its base rather large rounded mucronate petals, and small rounded sepals. The drupe is half-an-inch long, ovoid, and beaked, bright-red in colour, with terminal stigma much resembling that of *P. Macarthurii*, but the seed is deeply five-grooved, and the albumen is not ruminant.

The young plants of this Palm [of which a specimen was recently exhibited at the Royal Horticultural Society by Messrs. Sander] are remarkably elegant, on account of the narrow, tapering pinne closely crowded together, and will form a welcome acquisition to all lovers of decorative Palms. *H. Ridley, Singapore.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA LABIATA ALBA.

A BEAUTIFUL specimen of the pure white autumn-flowering *Cattleya labiata*, bearing six fine blossoms on three leads, was lately to be seen in flower in the collection of C. G. Roebling, Trenton, New Jersey, U.S.A., a collection noted for its pure white *Cattleyas*, of which mention may be made of *C. labiata alba*, *C. Mossii alba*, *C. Bluntii*, *C. Gaskelliana alba*, *C. Percivalliana alba*, *C. Trianae alba*, *C. Skinneri alba*, *C. Loddigesii alba*, *C. Harrisoniæ alba*, *C. Schroderæ alba*, *C. chocoensis alba*, *C. Warneri alba*, *C. Wallisii*, *C. Eldorado alba*, *C. intermedia alba*. Several of these are in duplicate, and it is Mr. Roebling's desire to add a white variety of any other species he can obtain. Two plants of the pure white variety of *Lælia Pattini* are also to be found in his collection.

He possesses a plant of *Dendrobium Phalænopsis hololeuca* with pure white flowers now open, and five varieties of *Cattleya Hardyana*, one of which, called the Trenton variety, so far exceeds all others in size, colour of the bloom, and in the extremely

* *Ptychosperma Sanderiana*, Ridley, n. sp.—Caules octopodales vel ultra, pollicis crassitie; folia 4-podales, pinnata, rachide tomento brunneo tecto, pinnis linearibus acuminatis alternis ultra 50, 1½ pedes longis, ½ poll. latis, apicibus bicuspidatis cuspidate uno longo, altero multo brevioro. Panicula infra foliaceas, majuscula ramis crassis pluribus, rachide pubescente. Flores masculi copiosi bini in fovea una, quatuorversi. Sepala brevia orbicularia obtusa pubescentia basi gibbosa aequalia, ½ poll. longa. Petala aequalia ferme duplo longiora, ovata obtusa. Stamina ad 15, petala vix superantia antheris linearibus versatilibus. Pistilli rudimentum fusiforme apice attenuato. Flores foeminei haud visi. Drupæ semi-pollicares, ovatae rostratae rubrae. Stigma terminalis. Pericarpium crustaceum, endocarpium pulposum. Semen conicum quinque-sulcatum. Albumen aequabile. *E. Papua tulit et. Micholitz.*

gorgeous lip, as to be without an equal. The lovely *Cypripedium Roeblingianum*, one of the finest crosses between *bellatulum* × *insigne* Chantini, and raised at Trenton, is again showing its flower-scape. *H. T. C.*

MR. T. B. HAYWOOD'S ORCHIDS.

When calling recently at Woodbatch Lodge, Reigate, primarily to inspect the Chrysanthemums, it was noticed that the collection of Orchids was in splendid condition. Some seedling *Dendrobiums* in 3 and 5-inch pots had made extraordinary growth. The seed was sown two years ago last April, and some of the pseudo-bulbs are now more than 2 feet in length, the difference in size and vigour between the present pseudo-bulbs and those made last year being extraordinary. There are about 300 of these plants, and there is a good chance therefore, that when the plants flower, there may be a few really good hybrids amongst them; but Mr. Salter would have had greater hopes, had he been able to obtain pollen from the best varieties up to date. Plants of *Dendrobium splendissimum grandiflorum* also had made large growths, so great that the getting of them thoroughly matured needs considerable care. *D. Phalænopsis Schroderæ* is producing a fine lot of blooms. There being about fifty plants of this useful autumn-flowering *Dendrobe*, flowers of many diverse shades are observable, but the darker coloured ones are the less common. The *Pleiones* are also in bloom, and *Vanda tricolor*, *V. cœrulea*, &c. One plant of the last-named species bears four strong spikes. Of the *Cypripediums*, a plant of C. T. B. Haywood, bore eight good specimens of its pretty, lilac-tinted flowers. *C. cœnanthum superbum* is in bloom, and *C. Spicerianum* × *Arthurianum* just showing for bloom. *P.*

ORCHIDS NOW IN BLOOM.

On the occasion of a recent visit to l'Horticulture Internationale, Brussels, *Lælia præstans* in variety was in bloom, the dark varieties being especially beautiful. One plant had white blossoms flushed with rose, the lip violet, with the throat golden yellow. Other flowers had the segments wavy and bent back, the tube of the lip almost wholly white, but rather yellowish within, the front lobe of the lip dark magenta, edged with white, with a central violet spot on the mauve.

A variety of *Cypripedium memoria Moensii* was also in bloom, with a very dark standard, the mid-rib 6 mill. (a quarter of an inch) wide, and deep red merging into brown. *Vanda Lindenii* bears trusses of beautiful white flowers. *V. suavis* and *tricolor* have dark markings on the lip. Among *Catasetums* were *C. macrocarpum*, *aureum*, *punctatum*, *Bungerothi*, *aurantiacum*, and *splendens aureum*.

There is a house containing many varieties of *Lælia Harrisoniæ*, and also a fine *Oncidium luridum*. *Cypripedium callosum* × *C. lævigatum* has gracefully-curving petals, the free tips of which cross one another; they are coffee-brown and magenta coloured, the brown streaks being especially distinct on one-half of the petals. The standard has the colour of that of *C. lævigatum*; green striped with brownish-red. The lip is brown. The flowers are superposed and effective. The leaves are deep green, with prominent veins. *Ch. de B.*

THE CHRONICLE OF A LITTLE CORNISH GARDEN.

(Continued from p. 211.)

SEPTEMBER.—Sunflowers, Michaelmas Daisies, and Dahlias, are, I suppose, the "flowers of the month;" at any rate, they are the most important flowers at present blooming in my garden. Now that the leaves are beginning to drop from trees and shrubs, the great plants of Asters and Sunflowers show up well among the bushes, and make the garden bright with yellow, orange, mauve, and white. Of the Sunflowers, perhaps the most brilliant, on account of its vigour and freedom of flowering, is *Helianthus rigidus*, with large brown-centred golden flowers. Its rampant growth and speedy spreading habit make it a somewhat dangerous plant to introduce very freely into the borders, as a single plant soon becomes many

hundreds if left unchecked. The taller *H. multiflorus* is also beautiful and vigorous, and both it and its varieties are well worth growing. *H. giganteus* should also be grown if room can be found for it, and in good soil it often reaches 15 feet in height. It flowers later than the other Sunflowers, and thus prolongs their blooming season. Another late kind is the graceful Sunflower (*H. orgyalis*), which is too slender to bear itself erect without support, and therefore must be staked or grown among bushes. The only other species I have is *H. latiflorus*, whose large yellow (and yellow-centred) flowers succeed those of *H. rigidus*. All these Sunflowers will grow nearly anywhere, but they are seen at their best (like most other plants) when grown in deeply-dug soil well enriched. One can then appreciate Browning's picture—

"Fancy the Pampas' sheen!

Miles and miles of gold and green,

Where the Sunflowers blow

In a solid glow;

And to break now and then the screen—

Black neck and eyeballs keen,

Up a wild horse leaps between."

In view of the Sunflowers' nationality, it is absurd to associate it with the story of the transformation and constancy of Clytie, although most people still do so. The story is a beautiful one, and the flower worthy of the association, so that one is tempted to say, "May the error prevail!"

It is a good sign that Michaelmas Daisies are gaining in popular attention and favour. When people can admire the comparatively insignificant yet gem-like flowers of the perennial Asters, they are on the road to salvation in matters of floral taste. A bush of *Aster cordifolius*, with its delicate pale mauve stars, represents an exactly opposite idea of beauty to that implied by an average geometric bed—and it is difficult to imagine how the same individual can admire these two things. By growing my Sunflowers and Michaelmas Daisies among bushes and shrubs, I do away with the necessity of formal stakes—which halve the beauty of any plant when used. Where bushy plants are grown away from shrubs and require support, I find that branching sticks (such as Pea-sticks), which can be hidden by the plant's foliage, are much less obnoxious than the ordinary straight rod to which the poor plant must be tied *en masse*.

There are so many good Michaelmas Daisies that I can do little more than name a few which have struck me as especially beautiful. The silky-leaved Starwort, *A. sericeus*, with deep violet flowers, is one of the very best; as is also the lilac Himalayan Starwort, *A. Thomsoni*, a somewhat dwarf species, with large flowers about 2 inches in diameter. Other splendid kinds are *A. acris*, which envelops itself in a mass of soft lilac-blue; the rich violet varieties of *A. Amellus* (especially *amelloides* and *bessarabicus*), the dwarf, bushy *A. dumosus*, with myriads of small mauve blossoms; the Heath-leaved, white-flowering *A. ericoideus*; *A. Novæ-Angliæ pulchellus*, and *A. N. A. roseus*, among the New England Starworts; and *A. Novi-Belgii*, F. W. Burbidge, with very large rose-lilac flowers; *A. N. B. St. Brigid*, *A. N. B. Flora*, and *A. N. B. Arthur Hind*, among the New Belgian varieties.

It seems hard to believe that the Cactus *Dahlia* was only introduced into England as recently as 1880—the year also in which the single *Dahlia* became popular. Previous to that time, it would appear that the show and Pompon varieties held the field. If these kinds were the only Dahlias we possessed, it is likely that with the recent development of taste in favour of flowers of looser and lighter habit, the *Dahlia* would now be lightly esteemed. There is a good deal of thought engendered by reading that in 1836 was published the *Dahlia Register*, containing over fifty coloured plates. The ups-and-downs of a flower's popularity are well exemplified by the *Dahlia's* career.

Of the various Cactus Dahlias, the scarlet kinds, such as *gloriosa*, have given me the greatest pleasure. The new single Cactus varieties I have found more useful for cutting than for decorating the garden, but

that may be owing to some defect in cultivation. Dahlias like a heavier soil than mine, although I am able to grow good bushes and good flowers. There are several very beautiful colours in the single Cactus group—especially the old-gold Earl Ravenswood—among those with which I am familiar.

When one begins to look for the fire burning in the grate, one is apt to turn philosophic, and to question the value of one's labour, whether in the garden or elsewhere.

In gardening we may escape from ourselves, and here, it seems to me, lies its very greatest value—greater even than its use in enabling us to escape from our fellows. A garden is not in any sense a rival of hill and woodland; yet how increasing is the joy with which, day after day, year

name of gardening. To me, gardening is a sort of applied branch of poetry, and poetry has nothing to do with gaudiness, stiff formality, or ostentation. That is why I hold that a small garden is more interesting than a very large one. The individual plants cannot have the same interest, and the personal part must be a smaller one where a staff of gardeners has to be employed. We cannot take the same interest in our children when we count them by the dozen, and have to depute their care to nurses, governesses, and the like. So it is with gardening. And the more interest we are able to take in our plants and flowers, the more readily will they enable us to forget the great problems, as well as those minor worries of life which seem to harass so many foolish people. *Harry Roberts.*

2 feet in length, and 4 inches in diameter. The species is not unlike *E. villosus*, but the fronds are larger, and the stem attains considerable dimensions, both as to length and thickness, the largest stem at Kew being 4 feet high, and a foot in diameter. It has been in cultivation at Kew about twenty years, but it appears to have been first introduced to the Berlin Botanic Gardens in 1874, and to have been sent out as a new plant by Mr. Bull in 1878. [See Masters, in *Gardeners' Chronicle*, April 6, 1878, p. 430.] It is one of the handsomest of the many Cycads grown in the Palm-house at Kew. *W. W.*

VERONICA LINDSAYI.

THIS was raised by me from home-ripened seed of *Veronica amplexicaulis*. It differs from that species chiefly in having pink-coloured instead of white flowers, in the leaves being quite glabrous, not glaucous, and in the habit generally being more compact than in that species.

The probability is that the plant is a natural hybrid between *V. amplexicaulis* and *V. pimeleoides*; at any rate, it is a good addition to this class of hardy ornamental shrubs (see fig. 97). *R. Lindsay.*

HOLLYHOCKS.

YOUR nice description and charming illustration of these in a recent issue of the *Gardeners' Chronicle*, will do much to bring back these old favourites to many a garden. Slowly the tide is turning in favour of these handsome plants. In all directions we hear the welcome news or see proofs of the fact that professional gardeners and amateurs are again trying to cultivate the Hollyhock; and not only trying, but succeeding. Growers for sale in various directions are guaranteeing clean seeds and plants. Others, like your correspondent, "B. R. L., Dulwich," confess to more or less disease each season, but are able to laugh at it, as it does little or no harm. Sow the seeds in the open the last week in May, the seedlings plant out early in August in ground at least 2 feet deep, water and mulch in dry weather, and never leave the plants longer than two years in the same ground, all will then be well with the Hollyhock. It will probably be news to many growers that dark-coloured or black Hollyhocks produce a larger percentage of plants than yellow, white, or lighter-coloured sorts.

The root-runs of Hollyhocks should be cultivated early, and richly manured. Early planting in the flowering quarters also fosters the development of long, strong pipe-like roots, which foster the development of long, strong flower-spikes, and send the roots burrowing down beyond the reach of injury from frosts.

Not a little of our present success with the Hollyhock arises from frequent changes of site or soil. Hollyhocks have always and everywhere more or less of an architectural character. This had a great deal to do with the evolution or intrusion of the Puccinia pest. Hollyhocks are most effective against stone or brick walls, buildings, terraces, &c.; consequently, they were often grown in ungenial, poor, dry, and unsuitable soils. Worse than this, for artistic reasons Hollyhocks were grown year after year on the same sites, in the same soil; the sites were often fixtures in close proximity to houses or terraces.

What was really needed was an annual or biennial change of soil. Instead of that it got too often poisoned with fungoid spores, and utterly exhausted under permanent crops of Hollyhocks. And yet a mere glance at your illustration, or a walk through the Regent's and other London parks, closer still to Charing Cross than Dulwich, shows to the most cursory observer that Hollyhocks are gross feeders. With fair feeding, deep root-runs, and plenty of water through the growing season, vital force beats back fungoid pests and other diseases. Guard Hollyhocks against exhaustion, and its close ally, codling, and as your readers may see for themselves on p. 291 of the *Gardeners' Chronicle*, the Hollyhocks at Dulwich or elsewhere to-day will match those of olden times, notwithstanding our fungoid pests. *D. T. F.*

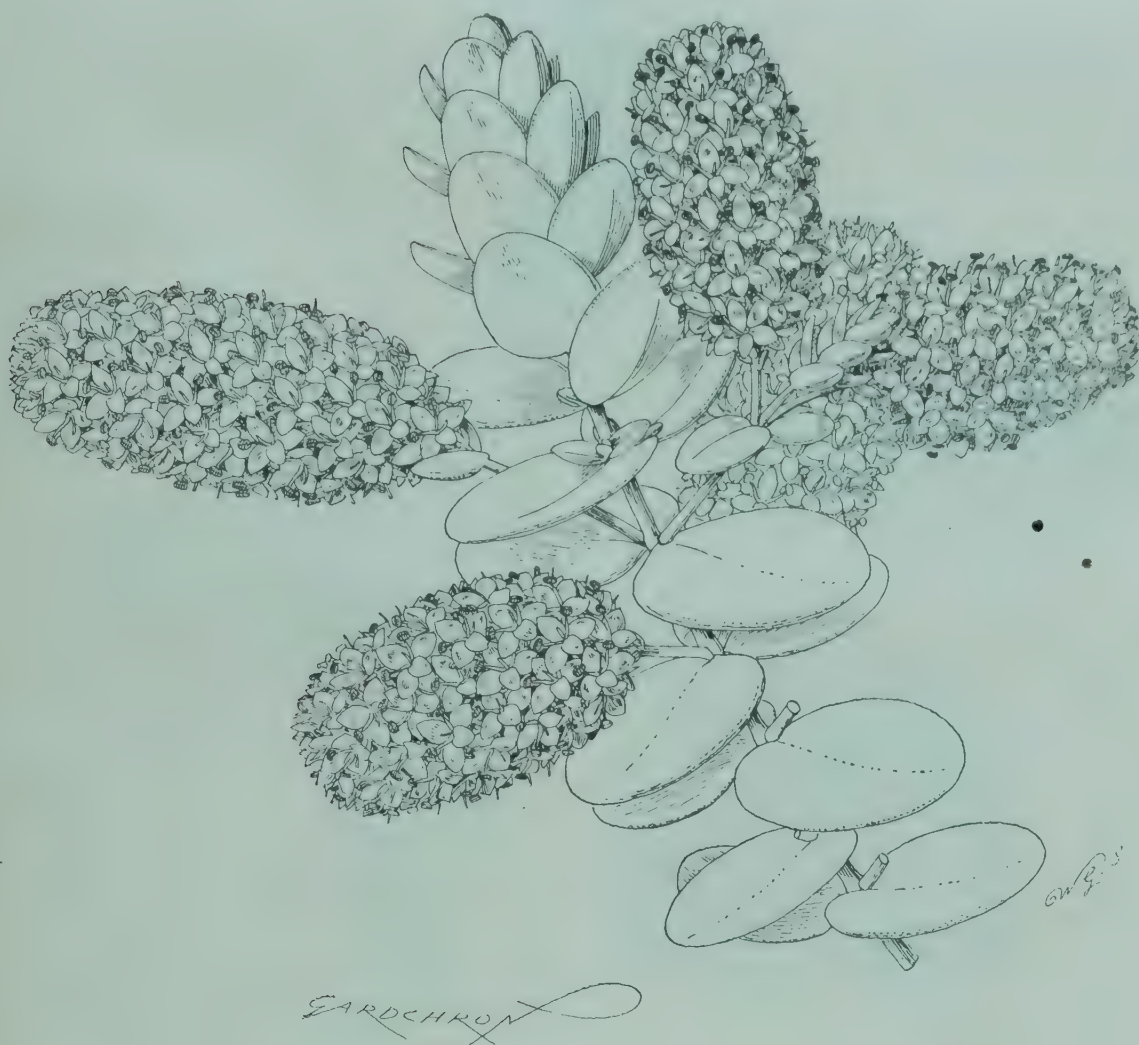


FIG. 97.—VERONICA LINDSAYI X : FLOWERS PINK-COLOURED.

after year, we walk our same old paths and see the same flowers spring up in their seasons in the same spots where they have regularly flourished before. Still, amidst all this sameness there is constant change. Every day new pictures appear, new arrangements are effected; and though the clump of Daffodils may bloom in just the same spot as before, it is much altered. The plants about it may die, and some have died, others have grown and developed; the flowers may be more or less, larger or smaller; and in thousands of ways, small points of difference—including some in ourselves—have helped to vary the impression. This constant change amidst fixity, is a great part of the secret of the garden's charm. We walk by the border seeing an old friend again blooming, and we receive a little surprise to see that it has new companions. A stroll round a garden of perennial plants is an invariable journey of discovery. To those who appreciate this sort of garden and gardening, such things as planting beds of Pelargoniums, carpet-bedding, and the like, are unworthy of the

KEW NOTES.

MOMORDICA MIXTA.—This handsome tropical Gourd is now attractively in fruit in the Water-Lily-house at Kew, the large egg-shaped spine-clothed fruits being of a rich crimson colour. A figure of the fruit was published in the *Gardeners' Chronicle*, November, 1894, p. 530. Seeds are ripened freely, but as the species is dioecious they are not reliable, as one may easily grow on half a dozen seedling plants of one sex, and consequently fail to get fruits. Cuttings of the lateral shoots root in a propagating-frame, and by this means one can be certain of obtaining a plant of each sex. Half a dozen fruits are quite sufficient for one plant to mature. The flowers are fleshy, pale yellow, with a purple eye-like blotch, and the leaves are like those of the Vegetable-Marrow in shape, but of a more papery substance.

ENCEPHALARTOS HILDEBRANDTI.

A large plant of this East African Cycad is now bearing seven male cones, the longest of which are

MULTIPLE PARENTAGE.

A NUMBER of letters call my attention to Mr. Druery's article in the issue of the *Gardeners' Chronicle*, for Oct. 22. Mr. Druery's assertion is correct so far as he states it, but there is something beyond this which produces multiple parentage; to obtain the combination of four Ferns, the four parents must be used. The combination of four varieties are very rare, but those of three are more common. I have repeated my experiments more than a hundred times in the last forty years, and these multiple varieties have never been obtained by gradual steps, as suggested, but accomplished at once. My last experiments, to me, have been equally conclusive. *Scolopendrium crispum*, *undulatum*, *muricatum*, *spirale*, and *Victoriæ* (crested), have given one variety (amongst others) with two forms of fronds on the same plant; the one form is *crispum* pure and simple, the other is a combination that is crested, undulate, muricate, and spiral.

Mr. Druery commences his article by saying, "The first and most striking instance was Mr. E. J. Lowe's hybrid between the cruciate form of *Polystichum angulare* and a dense form of *P. aculeatum*, a cruciate *aeuleatum* resulting." Now, singularly enough, this is the hybrid that in 1884 I described to the Linnean Society, accompanied by full-sized characteristic fronds. The late Mr. Thomas Moore returned me my MSS., saying the Society did not acknowledge that this was a hybrid, or that Ferns could be crossed, consequently the paper would not be printed; and Mr. Moore added, "I did see the hybrid character, the blood of each was apparant, but, nevertheless, it has not convinced me as regards crossing Ferns."

Next year (1885), Sir Joseph Hooker wrote, "that the crossing of Ferns was an acknowledged fact." In 1867, I had read a paper at the British Association at Dundee "On the production of Abnormal Ferns," and had a large collection of examples at the Nottingham meeting of the British Association in 1866; no one then believed that such crosses could be produced, except the late Professor Balfour. From 1851 I had been constantly exhibiting these varietal forms, notwithstanding they were looked upon with distrust. However, the late Professor Edward Forbes urged me to persevere; and afterwards Mr. Clapham, Dr. E. F. Fox, and Colonel Jones each repeated the experiments, corroborating my results. Dr. Fox took the greatest care in isolation, and in mixing the spores in different proportions, and stated that it was certain that more than one male organ had acted in the impregnation. Mr. Moly and Major Cowburn also helped, and gave encouraging advice. It was shown to me that there was no force in the antheridia (or male organs) to enable it [its contents] to be projected from one prothallus to another; but I pointed out that I used the skipjack for its conveyance. I had found that when prothalli had remained without frond-life for several years, on the skipjack being introduced fronds appeared in twelve days. On repeating the experiment in the present year (for the Biologist Exhibition) on prothalli that had been isolated for three years, fronds again appeared in twelve days, and these were at the exhibition. I had also a collection of 250 fully-grown varieties of my own productions, and the universal expression was that nothing like them had ever been seen before. After examining these for two days, Mr. Moly said that though he had spent his life in the study of Ferns, and knew most of the good varieties, he was astounded at the marvels that were exhibited.

My experiments have not been confined to Ferns. I am working on other plants, animals, birds, &c. More than twenty years ago a swan of mine had an egg impregnated only sixteen hours before it was laid, and a young swan was the result. This was said by a most eminent biologist to be an impossibility, and that a wild swan had visited the female. In the present year I made preparations to repeat the experiment. I isolated some hens for five weeks, and on knowing that an egg was to be laid on a certain day, a male was introduced; this was repeated six different times with different hens, the eggs were impregnated only an hour to two hours before being laid, and in all six instances chickens were

hatched. I have produced chickens in which the eggs were fertilised in one and two hours, and also from one to eight days with one coition, the eggs being some of them impregnated when the shell was calcareous, and others whilst they were membranaceous. The birds were at the biological exhibition together with two ducks from a double yolk egg, &c., another fact said to be impossible.

I ask Mr. Druery to produce my multiple varieties by any number of generations. He cannot do it; they must be produced at once and in a different manner to what he has stated, previous crosses would have produced quite a different result to those I have raised. Such anomalies are not yet understood, they will be eventually, perhaps not in my life-time; but

to be unworthy or unhandsome, a very large proportion compares favourably with the best of the imported species, and at the same time the plants have the merit of being different to them, and flower at different seasons. *Cattleya* × *Maroni*, the subject of our illustration (fig. 98), is a very good example of this, for its flowers are freely produced (the plant from which the illustration was taken having seven flowers on a spike), novel in form and colour, and delicately fragrant. It was raised by Mr. Chas. Maron, of Brunoy, Seine-et-Oise, France, and was exhibited by him at the Royal Horticultural Society on October 25 this year, when the Orchid Committee awarded it a First-class Certificate.

As will be seen by the illustration, the seed parent,



FIG. 98.—CATTLEYA × MARONI.

future generations will know that more than one male germ has originated multiple parentage, and that more than one manner of propagation may be shown. *E. J. Lowe*.

CATTLEYA × MARONI (VELUTINA ♀, DOWIANA AUREA ♂).

As time goes on, hybrid Orchids are being steadily increased in numbers, and sufficient good things appear each year to warrant the continued labours of the hybridist engaged in this kind of work, though occasionally one is led to demur at some of the poorer forms obtained from injudiciously crossing in the easily-worked genus, *Cypripedium*. But such matters soon right themselves in gardens, for the good things are taken care of, and the poorer ones get in course of time elbowed out of cultivation. The crosses made with *Cattleyas* and *Laelias*, and by crossing the two genera named, have produced very happy results, for while none of the progeny can be said

C. velutina (fig. 99, p. 333), asserts itself, especially in the form of the labellum, its narrow base, and the peculiar rounded front lobe. In colour the sepals and petals are of a peculiar bronzy-yellow or old-gold tint; the labellum yellow at the base, the front portion veined and tinged with purplish-crimson, the more pronounced veining being raised above the surface. It should be said that originally the late Professor Reichenbach thought *C. velutina* (which first flowered with Joseph Broome, Esq., in 1870) was a natural hybrid between *C. bicolor* and a form of *C. Leopoldi*, but since that time it has on several occasions been imported in quantity, of a true character, and that theory, therefore, is much weakened.

WINDOW GARDENING.

At this season of the year, the thoughts of all who love their window-garden turn to the important question—"What shall we put in our window-boxes for the spring?" Often it is difficult to think of new

combinations when one has not much time to give to the subject, and it is hoped that the following suggestions may prove useful to many:—

(1). An early and very beautiful display can be had by edging the front and sides of the window-box with a thick band of single-flowering Snowdrops (2s. 6d. per 100), and filling the centre and back entirely with the large Golden Crocus (largest yellow, 2s. 6d. per 100).

(2). Even earlier than the Crocus blooms the cheerful little winter Aconite, and when the flower is over, the green frill which each blossom wore round its neck is still beautiful, and sets off other flowers. Therefore, my second suggestion is, that winter Aconite roots (2s. 6d. per 100), and those of purple Crocuses (large blue, 1s. 9d. per 100), be evenly distributed close together throughout the box. This will scarcely be as showy as the yellow Crocuses above, but I think it will have its charm for some people.

(3). In the same manner the beautiful blue *Scilla præcox* (6d. per dozen) may be grown in conjunction with the winter Aconite; and from the time when the first "gilt spangles" of the winter Aconite appear, very early in the opening year, until the fading of the brilliant blue *Scilla* in May, the effect will always be charming.

(4). A very lovely box might be produced by an arrangement according to taste, either mixed evenly in little clumps, or disposed in lines, of pure white Crocuses (Mary Stuart or Mont Blanc, at 6d. per dozen; or Sutton's Inimitable, white, at 8d.), and *Scilla præcox*. These will usually bloom simultaneously, and will then be extremely effective.

(5). My next suggestion consists of a groundwork of white Dog's-tooth Violets (1s. per dozen), whose beautiful dappled foliage will continue to give pleasure to the eye long after the flowers have disappeared. Amongst these are to be disposed groups of gentian-blue Glory of the Snow (*Chionodoxa sardensis*, 9d. per dozen).

(6). Another pretty effect can be produced by laying down a carpet of double white Daisies closely planted together, through which groups of large purple Crocus spring at intervals.

(7). For those who are contented to wait a little longer for the perfection of their spring window-garden, an edging of white double Daisies along the front, backed with low-growing pink Tulips will probably give satisfaction. Proserpine, at 2s. per dozen, is a very beautiful Tulip, and well suited for the purpose; but Cottage Maid, at 1s. 9d. per dozen, or the rose-coloured Joost Van Vondel, at 1s. 3d., will probably answer well.

(8). A similar arrangement with different materials might be made by substituting white Dog's-tooth Violets for the double Daisies, and miniature Hyacinths of all colours mixed (2s. per dozen) for the pink Tulips.

(9). Yet another combination in the same form, and to my mind a very charming one, is made by edging the front of the box with *Scilla peruviana* (?) (3s. 6d. per dozen), and backing its brilliant blue by rows of snowy-white miniature Hyacinths (3s. per dozen). This *Scilla* is more delicate than *Scilla præcox*, and might be safer for a covering of cocoanut fibre during the severe weather. It flowers later than its hardier relation, and should coincide with the Hyacinths.

(10). The beautiful *Chionodoxa sardensis* mentioned above (see 5) may be combined with red (Artus, 9d. per dozen) and white (l'Immaculé, 1s. per dozen) Tulips to make a tricolor window-box, and the effect will be bright and pleasing.

(11). A very handsome and unusual combination is formed by clumps of black Pansies, alternating with scarlet Van Thol Tulips (8d. per dozen), or deep red Artus (9d. per dozen).

(12). Less sombre than the above, and very dainty in effect are clumps of pure white Pansies, alternating with blue Forget-me-nots, of which latter the best species to choose from are—(1) The true water Forget-me-not, *Myosotis palustris semperflorens*, height about 9 inches; (2) Sutton's Dwarf Blue, height about 4 inches; or (3) *disitiflora*, an early-flowering Forget-me-not, height 9 inches.

(13). One of the above varieties of Forget-me-not may also be used prettily in combination with red Polyanthus.

(14). Clear yellow Pansies may be grown in alternation with deep purple Auriculas with good effect.

(15). A very graceful and lovely window-box will be one in which purple Aubrietia is planted in front and allowed slightly to overhang the edge, whilst pure white Pansies fill the back portion. The best of the purple Aubrietias is *Leichtlinii*, the seed of which is sold at 1s. 6d. per packet.

(16). My last suggestion is, an edging of white double Primroses in the front, backed by pink miniature Hyacinths (Beauty or Eveline, 3s. per dozen).

Anyone who is so greedy as to desire two feasts during the spring might obtain them by beginning with my first suggestion, and, meanwhile, growing *Scilla peruviana* and white miniature Hyacinths, or some other of the later bulbs in pots, ready to put out as soon as the Snowdrop and Crocus display should be over. E. H. G.

[*Scilla peruviana* is surely too big for the purpose. Is not some other species intended? Ed.]

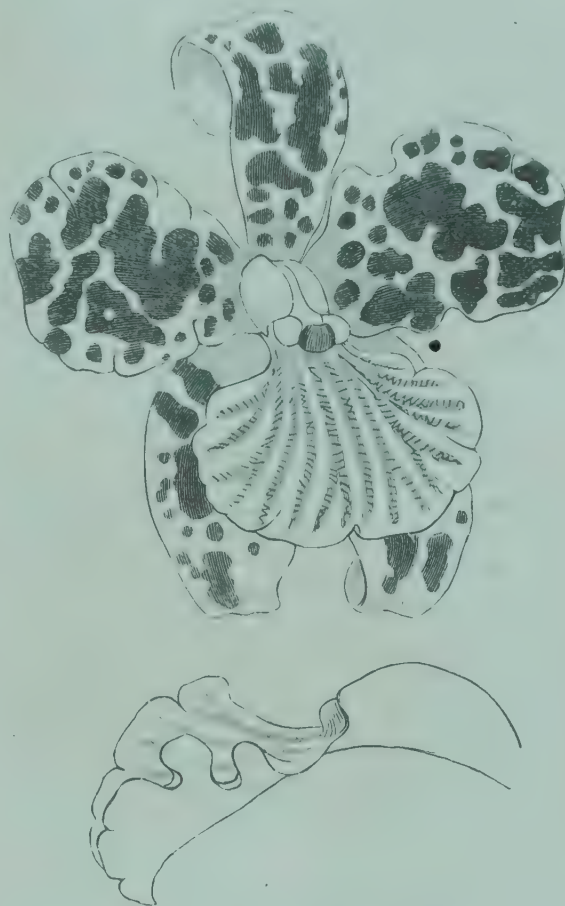


FIG. 99.—CATTLEYA VELUTINA: FEMALE PARENT OF CATTLEYA X MARONI. (SEE P. 332.)

FLORISTS' FLOWERS.

WINTER-FLOWERING ZONAL PELARGONIUMS.

WHILST these very brilliant and long-flowering plants come naturally under the designation of florists' flowers, seldom they are judged on the usual basis of such flowers. These zonal Pelargoniums are ordinarily grown for summer-blooming, both indoors and outside, and in either way give very striking effects. But still the brilliant hues of the flowers seem somewhat too warm when seen under bright summer sunshine, and many of the most beautiful hues, especially those shaded with diverse tints, materially lose in beauty. But these are glorious late autumn and winter-blooming plants, and it is specially interesting to note how singularly lovely are the hues of the shaded or otherwise rich-coloured flowers, when produced in the dull days of winter.

It is commonly assumed that certain varieties are better suited for winter-blooming than are others;

that is so far true that the best bloomers in summer flower most profusely in winter. Practically, all varieties will bloom very well in winter if the plants be properly prepared for that season, and also have furnished to them the needful conditions.

One of our most successful growers of these Pelargoniums, who is a private gardener, and whose facilities are not those which can be furnished so liberally at Swanley, Lewisham, or in other florists establishments, makes it his rule of practice to take the points of the stoutest shoots from the plants about the middle of February, that have been blooming from the beginning of the previous October, and insert them singly into small pots, and stand them on a shelf in a warm-house to root. In a few weeks these are ready to shift into 5-inch pots, and may even receive the first pinching. Then they are got into 7-inch pots, and when partially rooted, stood outdoors on a fine gravel or ash-floor, in the full light of the sun, for the summer. Here they are further occasionally pinched, all bloom-buds being rigidly picked off. An occasional watering with weak liquid-manure is given when the pots are well filled with roots. About the third week in August pinching ceases, and the plants then make free growth. By the middle of September they are put into a light, airy span-house that is but moderately heated, and in two or three weeks become brilliantly flowered, the colours being wonderfully varied, shades and hues singularly refined and beautiful; flowers large and rounded, trusses of good size, and in most cases borne in great profusion. No wonder such a body of plants, probably six to seven dozen, by the end of October, presents a mass of beauty in flowers that at that time of the year no other plants could rival, much more excel. Those who wish to have blooms later into the winter, may easily secure that by pinching and housing rather later. When plants are thus prepared for the purpose, it is quite easy to have them blooming gloriously for a period of fully five months. A. D.

PLANT NOTES.

SCOLOPENDRIUM NIGRIPES.

(= ACROSTICHUM LINDENI.)

AMONG the many interesting plants exhibited at the last Ghent Quinquennial by M. Linden, in commemoration of his father's work, was a Fern named *Acrostichum Lindenii*. In habit it somewhat resembled *Adiantum reniforme*, but the fronds were coarser. An example of it, presented to Kew by M. Linden, has lately produced fertile fronds, which enabled Mr. Baker to at once identify it as *Scolopendrium nigripes*, Hook. (*Schaffneria nigripes*, Fée). It was figured and described in Hooker's *Kew Journal of Botany*, ix. (1857), and there are specimens of it in the Kew Herbarium, from Mexico and Guatemala. I cannot find, however, that it has ever been in cultivation until M. Linden introduced it. The Kew example has formed a rosette of roundish leaves; with stipes less than an inch long, and springing from this is a second series of fronds with smooth black stipes, 3 inches long, and a thick, brittle, reniform or roundish blade, 3 inches across; glaucous green above, yellow-green below, the sori in irregular linear patches. It differs from all other members of the genus, of which about a dozen are known, in having no distinct midrib, but the veins are flabellate, uniting towards the edge. S. Delavayi, from North Muney-pore, figured in the *Journal of the Linnean Society*, xxv., pl. 41, appears to have the same characteristics as S. nigripes, except that its fronds are round, with a cordate base. To lovers of indoor Ferns, M. Linden's plant has much to recommend it. W. W.

TAPEINANTHUS HUMILIS.

A most charming little plant bearing this name, I have just seen at Prof. M. Foster's, Shelford, and it is all the more interesting because it is hardly known at all in cultivation. It at once suggests a comparison with *Narcissus*, and to this genus it appears to be closely allied, although quite distinct in having a corona consisting of only six minute scales. The

leaves are filiform, 2 or 3 inches in length, and the scapes of similar height, bear each an erect, bright yellow-coloured, and rather spreading flower, about $\frac{1}{2}$ inch long, and with quite narrow segments, which are just equalled in length by the six stamens. It was growing in a pot out-of-doors, and flowering at this time of the year, its value among choice bulbs is clearly evident. Perhaps there are among readers of this paragraph, those who, having friends resident in Spain, could send some plants of this species home, and I may, therefore, repeat the Professor's remarks that he finds it succeeds with precisely the same kind of treatment accorded to *Narcissus monophyllus*. It is a native of Spain and Morocco, and is described by Mr. Baker as very rare. *R. I. L.*

FOREIGN CORRESPONDENCE.

MR. LEMOINE'S NEW DOUBLE SEMPER-FLORENS BEGONIAS.

THE most striking of the novelties introduced into commerce this autumn by Mr. Lemoine, are undoubtedly his new Double Semperflorens Begonias. They are the result of about four or five years' steady work of crossing and selecting innumerable seedlings, doubtless the forerunners of a class of plants destined to play as great a rôle as the double tuberous-rooted have done.

The change obvious on comparing the new varieties with the ordinary single semperflorens varieties, is remarkable, both male and female flowers being greatly transformed. Stamens, pistils, petals, &c., have assumed various graceful forms, the male flowers being most perfect, and the whole arrangement of petals, &c., combines to form very pretty, more or less ball-like flowers of about $1\frac{1}{2}$ inches in diameter. The leaves are practically the same as the ordinary run of semperflorens Begonias, perhaps even a little more fleshy in one or two of the varieties, and vary in colour from bright-green to bronze, and even darker according to a more or less sunny position. When grown in pots as specimen plants, and for this they are as yet only really suited, flowering both winter and summer, they grow to about 2 or $2\frac{1}{2}$ feet (70 to 75 cm.) high, including, of course, pot, about 8 inches (20 cm.) high, forming rather tall, elegant plants. A slight drawback, however, especially when wishing to use them as border or group plants, is that they do not branch sufficiently, with one exception, although among the seedlings there are several which seem to be better in this respect, and we may therefore look for improvement.

They bloom in tufts at the ends of the branches, five to ten flowers being open at a time, and the first flowers, as practically with all double Begonias, are the best, the succeeding ones containing more semi-doubles and singles. This is most apparent when planted in the open, as the heavier, double flowers get knocked off more easily by wind and rain, leaving the others to fill the vacancy. The change in the tints of flowers and foliage is in the open also more marked.

The following are the four named varieties:—

Boule de Neige.—Leaves bright green; the flowers, which are well double, are white, assuming a rosy tint in the open. Stamens and pistils, are, as with all the varieties, yellow, either lighter or darker.

Gloire du Montet.—Also a green-leaved variety, which, however, in the open becomes slightly bronzed. The flowers, which are of a pretty dark-rose, are very double, and assume in opening a somewhat reddish tint.

Nancy.—This is one of the best, with green foliage, and flowers of a somewhat more delicate rose than those of *Gloire du Montet*, and very well formed and double. The rims of the flowers are also slightly darker than the centre of same; this variety makes nice bushy plants.

Triomphe de Lorraine.—Leaves bronzy-green, becoming in the open (like *Vernon*) dark reddish-brown. Flowers are dark carmine-red, becoming lighter on passing, and also appearing so under glass.

As already mentioned, they are very effective especially as winter-flowering specimens, and although they will in due course doubtless be surpassed by still better varieties, especially as regards the varieties for groups, they are at present unique, and will doubtless remain so for some time to come. They show what can be done by working with a definite object in view. *H. R. Werdmüller, Nancy, October, 1898.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorset.

Orchids now Growing.—Plants of *Pescatorea Lehmanni*, *P. Klabochiana*, *P. cerina*, *P. Dayana*, *P. Roezli*, *Bollea coelestis*, *B. Patini*, *B. Lalandi*, *B. Schroderiana*, *Huntleya meleagris*, *H. albida*, *H. Wailesiana*, *Batemannia Burti*, *B. Colleyi*, and *Chondorrhynca* (*Stenia*) *Chestertoni*, are now growing freely, and as soon as the night temperature gets low a few degrees more heat than is maintained in the intermediate-house should be afforded them, and the cool part of the East Indian-house is a suitable place in the winter, as none of these plants seems to thrive in a lower temperature than, or much above 60° . Let them be kept near the glass in a shady position, preserving a constantly saturated atmosphere around them, and never allowing them to get dry at the root. Notwithstanding all the dampness afforded, a small species of *acarus* (red-spider) is apt to infest the undersides of the leaves, which, if not quickly eradicated by sponging, soon change the latter to a sickly colour.

Galeandra Devoniana is a pretty Orchid, now coming into bloom, the flowers being produced at the apex of the newly-made growth. The north or shady side of the East Indian-house is a suitable place for it. Keep the points of the stems as near to the roof-glass as possible, without actually touching it; and after the flowers have faded afford the plant a short rest by keeping it moderately dry at the root. Immediately growth recommences, the plant should have an abundance of heat and moisture till the flowering season again comes round.

Cattleya Bowringiana.—At the present time this plant forms the chief attraction in the *Cattleya*-house, for although the individual flowers are smaller than most *Cattleyas*, they are of a rich colour, strong spikes of which carrying about twenty blooms each, produce a fine effect, especially by artificial light. As soon as the flowers fade, repotting should be attended to if it be necessary, because in a very short time new roots will protrude from the base of the flowering pseudo-bulbs, and any delay in repotting would result in injury. The plants should be carefully turned out of their pots, or in the case of well-rooted specimens the pots should be broken. If the roots have seized upon the drainage crocks, let them alone, and place the mass just as it is in a larger pot, filling up with fresh crocks, and such compost as is generally made use of. After the flowers fade, whether the plants have been repotted or not, they should receive only sufficient water to keep the pseudo-bulbs and leaves plump and fresh-looking till growth recommences.

Cattleya Percivalliana having completed its new pseudo-bulbs, should be kept only moderately dry at the root.

Cymbidium Lowianum.—Strong plants which have completed their growth, and are not showing flower-spikes, should be kept for a few weeks longer on the dry side, otherwise they will start into growth, but not produce flowers. Those plants possessing flower-spikes, should receive moisture at the root. The plant should be kept at the lightest and coolest end of the intermediate-house, with its foliage almost touching the roof-glass.

Dendrobium thyrsiflorum, *D. densiflorum*, *D. Schroderæ*, *D. Griffithianum*, *D. palpebræ*, *D. Guibertianum*, *D. Farmeri*, *D. suavisimum*, and *D. chrysotoxum*, which have ceased to grow, may be removed to a cooler and airier house; but if any of these plants should perchance have started growth, a light position in the East Indian-house will be best for them until the growth is completed; for as plants of this section of *Dendrobiums* grow rapidly, there will still be time to get these late growths ripened.

Miscellaneous.—The present mild weather cannot be expected to endure much longer, and as soon as

frost appears imminent, the plants named below should be removed from the cool-house to the cooler part of the intermediate-house, and where they must have abundance of light and air:—*Dendrobium Wattianum*, *D. infundibulum*, *D. Jamesianum*, *Masdevallia tovarensis*, *M. Schlimi*, *M. ephippium*, and all those of the *M. Chimæra* section. *Lælia harpophylla*, *L. monophylla*, *Odontoglossum Kramerii*, *Oncidium Warscewiczii* (*Weltoni*), *O. aurosum*, *O. bifrons*, *Cryptophoranthus Dayanus*, *Angræcum falcatum*, and *Aërides japonicum*. Carefully regulate the temperatures in each division as advised in former calendars, and, above all things, guard against an arid atmosphere.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of Salisbury, Hatfield House, Herts.

The Early Vinery.—The outside border (if any) of the early vinery should have, if the Vines are to be started in about three weeks, a top-dressing of loam and bone-meal, or some other manurial aid, and if on examination the rain is found not to have penetrated to the bottom of the border, a copious application of tepid water should be made. Having done this, put on a 2-feet-thick layer of Oak, Beech, or Spanish-Chestnut leaves, making this quite firm, and covering the whole with long stable-litter.

The Peach-houses.—Preparation for the next forcing season should commence as soon as the foliage has fallen from the trees, not delaying the work until the buds become prominent, and of course more liable to injury by the various processes of pruning, dressing, &c. Trees in the early-house, and all those which were forced early this year, should be the first taken in hand, finally cutting out all weak and surplus shoots, removing those which have reached the limits of the trellis or the tree, and thinning out the bearing-shoots, so as to avoid the crowding of the foliage. The pruning should be done with a sharp knife, and all cuts made should be made slantingly, and close to triple-buds, or a stout wood-bud. Should it be found necessary to use the pruning-saw, let the rough edges of the bark be made smooth with the knife. The pruning being finished, detach the tree entirely from the trellis, and tie the smaller shoots loosely to the main branches, the latter being secured to the trellis. Having done this, let the wood-work be cleaned, using for the purpose soft-soap and hot water. A large brown-scale is troublesome on Peach-trees at times, but it can be got rid of with a hard scrubbing-brush and soft-soapsuds, using the soap at the rate of 4 oz. to 1 gallon of water. The day after washing the trees, paint them over with a mixture of soap and water of the same strength, with one-twentieth of a gallon of the XL-All dipping compound added, sulphur, clay, and cow-manure being stirred in with it, to afford consistency and body. In dressing the trees with this mixture, dab it into all the rougher parts of the old wood, so as to smother, and thus annihilate the insects harbouring therein; and in dressing the young shoots, let the brush be drawn upwards to the points of the shoots. After the dressing has dried, the trees may be secured to the trellis in the usual manner. In doing this, a beginning should be made with the main branches, using for these tarred string or osiers, taking the precaution to put a patch of leather or cloth round the branch if the pressure is severe. The weak shoots may be tied in with bast of some sort. Let the brick-walls of the house be limewashed, and the surface-soil renewed with turfy-loam and lime-rubble, enriched with partially-decayed bone-meal or manure. The house should then be left open in order to retard the trees as much as possible till forcing is begun. The preparation of the earliest Peach-house being finished, the next in point of earliness may be similarly treated, and so on, till all of them have been put in good order. It is more difficult to afford the necessary rest to the trees if the Peach-houses are filled with plants; yet even then a low temperature should rule, the trees receiving the first consideration. If the borders in the late-house are getting dry, at once afford them a thorough application of water.

Pot-Strawberries.—The time has come when these must be housed or protected in some manner, notwithstanding the plants bear sharp frosts without harm. The best place to winter pot-Strawberries is a cold-pit or frame, and the next best is to plunge the plants up to the rim in fine coal-ashes, while standing on a well-drained bottom, in beds 6 to 8 feet wide, sheltered from harsh winds by a wall or close fence. Some gardeners place the plants on their sides in tiers several feet high, either facing

two ways, or building the tiers against a wall; but the plants are apt to suffer from lack of moisture in the pots, and I do not recommend this method.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Cauliflowers.—Any plants of that fine Cauliflower, Autumn Giant, which may be showing heads, should be lifted with as much soil as will hang to the roots, and heeled-in close together in a cold pit, frame, or open shed, covering them in the latter shelter with clean straw in frosty weather. Continue to plant young Cauliflower-plants out under *cloches* and hand-lights on the south border, or plant out in cold pits and common garden-frames. To prevent spindling, allow 4 inches or more space from plant to plant, and afford air freely at all times when there is no frost.

Spring Cabbages.—It is not yet too late in the South to plant Cabbages. Let the Dutch-hoe be freely used between the rows of Cabbages planted in October and earlier, choosing a day for the job when the soil is not sticky, and leave it with a crumbly surface.

Protecting Broccoli.—The Broccoli plants, which at this date are growing freely owing to the warmth of the soil and the much-needed rains, will be in a tender condition, and more than usually likely to suffer from frost. It will therefore be advisable to give them a slight check, by lifting them with as much soil as will conveniently come away with the roots, laying them in a slanting position in a trench, with their heads turned to the north. In doing this sort of work, the first trench should be thrown out 18 inches wide and 9 inches deep, a space of 2 feet being kept between the succeeding rows, and the plants should lay with their heads near to the ground, but not touching it. Another method is not to lift entirely, but to take out a spadeful of soil on the north side of a plant, squeeze over the stem in that direction, and with the soil similarly removed from the next plant cover the exposed part of the stem, the weight of which will keep the lowered plant steady; and so on through the entire plantation.

Salads.—Lettuces growing in pits capable of being heated must be daily aired, and water afforded when the soil needs it. In wet and stormy weather give air, but do not draw off the lights. Chervil and Parsley transplanted last month, also Radishes, Mustard and Cress, sown in the open border, will be the better, should sharp frosts occur, for some kind of protection, such as that afforded by a few branches of evergreens, and employing Russian mats in very severe weather.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

The Pear.—This fruit requires more heat than the Apple to bring it to perfection, and, except in the southern counties, a wall is necessary for such varieties as Glout Morceau, Beurré Diel, Beurré Rance, Thomeon's, Crassane, Ne Plus Meuris, and many others. Trees of these varieties will bear good crops sometimes away from walls, but the fruit is seldom fit for the dessert. The early and mid-season varieties occasionally do well as pyramids or standards in the midland and northern counties, but owing to lack of protection at the period of flowering the gardener has many failures to deplore. The best soil for the Pear is a retentive loam of at least 2½ feet deep, and containing scarcely any lime; still, good fruits may be grown on clay soil if this be properly drained; and on soils overlying the red sandstone and whinstone, if these are of sufficient depth. The wilding Pear-stock is best for soils that are deep and of good quality, and where the sub-soil is suitable for the growth of fruit-trees; but as the Pear-stock is naturally deep-rooting, it cannot be recommended for shallow soils. For these the Quince forms the best stock, owing to the abundance of roots produced near the surface of the ground. The Pear on the Quince grows to moderate dimensions, and trees budded or grafted upon it may be planted at half the distance apart of those on the wilding stock. As a general rule the fruits from trees on the Quince are larger and of better colour than on the wilding, but the quality of the fruit is less good. The method of training a Pear-tree on a wall may be horizontal, fan, or single and double cordon. There are a number of the first two forms at Belvoir, and I am unable to discern any difference between them in regard to their cropping qualities; fan-shaped trees have an advantage in gaps being more easily filled up if a branch die, which is

always difficult with horizontally trained trees. Single, upright, or oblique cordons, on the Quince-stock cover a wall quickly if they are planted at 3 to 4 feet apart, and a crop of fruit is more quickly obtained in this way, as well as greater variety. A west wall forms the best aspect for early and mid-season Pears, and in the southern counties it is warm enough for any variety, but in the midlands and northern counties of England, and in Ireland, Scotland, and Wales, late varieties require a south wall to bring the fruit to perfection. The east aspect is not to be recommended, except for late-blossoming Pears. The following varieties succeed on pyramids in warm seasons in the midland counties, and the names are given in order of ripening: Beurré Giffard, Williams' Bon Chrétien,* Beurré d'Amanlis, Beurré Hardy, Welbeck Bergamotte, Louise Bonne of Jersey,* Beurré Capiaumont,* Dunmore, Doyenné du Comice, Conseiller de la Cour, Marie Louise,* Madame Treyve, Thomson's, Beurré du Buisson, Passe Crassane; and of stewing Pears: Catillac, and Bellissime d'Hiver. Those marked with an * succeed on standards. Selection for walls in their order of ripening: Beurré Giffard, Jargonelle, Fondante d'Automne, Williams' Bon Chrétien, Beurré d'Amanlis, Louise Bonne of Jersey, Beurré Superfin, Beurré Hardy, Doyenné du Comice, Marie Louise, Thomson's, Beurré du Buisson, Pitmaston Duchess, Zephirin Gregoire, Beurré d'Anjou, Beurré de Jonghe, Winter Nelis, Glout Morceau, Doyenné d'Alençon, Easter Beurré, Josephine de Malines, Olivier des Serres, Passe Crassane, Ne Plus Meuris, Bergamotte d'Esperen.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford, Kent.

Planting Roses.—The present month offers the most suitable time for planting Roses, although they may be planted as late as March, and potted Roses as late as May and June. The situation which suits the Rose best is one sheltered from cold winds, but which is at the same time open and exposed to the sun. Roses much shut in by buildings, trees, or crowded by other plants, are apt to suffer from mildew; therefore, a spot sheltered on the north and east sides, with an open exposure to the south and west, is a good place for a Rose-garden. Although the Rose will, to a certain extent, grow in almost any kind of soil, a good strong deep loam is the best. The land must be well drained, and if it be clayey or retentive of water, a considerable portion of charred soil, ballast, wood-ashes and road-grit may be incorporated with it in the process of trenching, cow or pig-manure being employed at the same time. The Rose does not grow satisfactorily in very light, sandy, peaty, or chalky soils, and where such is the staple, it should be removed from the beds to the depth of 2 feet, and replaced with some strong loam, preferably the top spit from a pasture. In planting dwarf Roses, see that the point of union between the bud and the stock is buried an inch or two below the level of the ground, and that the roots are laid out evenly and regularly at the bottom of a wide hole, which should be rather convex in the middle, and the soil made firm before putting in the plant, and also after it is planted.

Standard Roses should be staked, and lightly secured at the time of planting. A good mulch of rotten pig or stable-dung should follow the planting, it being buried or covered with soil in the following spring. I give a list of good varieties:—

Dark-coloured H. P. Roses.—Abel Carrière, Black Prince, Crown Prince, Prince Camille de Rohan, Earl of Dufferin, Horace Vernet, Louis Van Houtte, Reynolds Hole, Sir Rowland Hill, Sultan of Zanzibar, and Xavier Olibo.

Pink-coloured H. P. Roses.—Abel Grand, Baroness Rothschild, Captain Christy, Mrs. Sharmian Crawford, Mrs. John Laing, Heinrich Schultheiss, Her Majesty, Madame Gabrielle Luizet, Jeannie Dickson, Marchioness of Downshire, Mrs. George Dickson, and Marchioness of Dufferin, François Michelin.

Red-coloured H. P. Roses.—A. K. Williams, Alfred Colomb, Arthur Dickson, Beauty of Waltham, Camille Bernardin, Charles Lefebvre, Duchess of Bedford, Duke of Edinburgh, Duke of Teck, Dupuy Jamain, Etienne Levot, Fisher Holmes, Captain Hayward, Lady Helen Stewart, Lady Arthur Hill, Gustave Piganeau, General Jacqueminot, Magua Charta, Marie Baumann, Susanne-Marie Rodocanachi, Maurice Bernardin, Marie Rady, and Ulrich Brunner.

White H. P. Roses.—Marchioness of Londonderry, Margaret Dickson, Souvenir de la Malmaison, Violette Bouyer, Boule de Neige, and Merveille de Lyon.

Gloire Lyonnaise is a Rose which should be in every garden; the colour is a pale yellow; the flower-buds are long and filbert-shaped, and it is an enormous bloomer, continuing till late in the autumn; and the plant is robust, and almost evergreen.

Tea Roses, which are tenderer than the hybrid perpetuals, should be planted where they are protected from cold winds by a board fence, hedge, or wall. The following are some good varieties: Beauté Inconstante, Bouquet d'Or, Catherine Mermet, Céline Forestier, Comtesse de Nadaillac, Madame Lambard, Marie Van Houtte, Maréchal Niel, Maman Cochet, The Bride, Souvenir d'Elise Vardon, S. de S. A. Prince, S. de une Ami, Madame Berard, Ethel Brownlow, and Innocente Pirola.

Hybrid Teas.—For general garden decoration, and for obtaining blooms throughout the summer and autumn months, the class called Hybrid Teas surpasses all others, and of these the following may be selected: La France, Augustine Guinoiseau, Cheshunt Hybrid, Grace Darling, Pink Rover, Viscountess Folkestone, Caroline Testout, Lady H. Grosvenor, Kaiserin A. Victoria, and Belle Siebrecht.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Carnations.—A light, airy house is essential for the successful treatment of tree Carnations, moderate fire-heat being employed in cold damp weather, ventilation at the same time being afforded by the upper sashes. Water should be very sparingly used. Green-fly is often troublesome, and measures must be taken to kill the pest as soon as detected. If flowers are wished for during the months of November, December, and January, the plants must be gently forced.

Marguerite-Carnations fail to open their blooms if kept in a low temperature, and in the case of these, a gentle warmth is very necessary; and should the plants be spoiled by being forced, it is but a small loss, fresh plants being easily raised. Miss Joliffe among tree varieties is one that bears gentle forcing, the only noticeable effect that forcing has on it, being that the flowers are rather small and paler in colour. As forcing tends to weaken the plants, it is not wise to propagate from forced plants. Uriah Pike and other varieties that were layered early in cold frames, and are well established in 9-inch flower-pots, may be subjected to gentle warmth, which will induce them to produce flowers. Later layers, well established in 4-inch flower-pots, may be placed into 6-inch ones, and then plunged in coal-ashes in cold pits. Layers of Miss Joliffe or any others intended for flowering in pots next year should be lifted without loss of time and potted. Early-layered Souvenir de la Malmaison will, under fair treatment, have grown into strong plants, and if the plants have plenty of roots they may be re-potted into 6-inch pots. A compost consisting of fibrous loam, with one-fourth part of leaf-mould and decayed stable-dung, with coarse silver-sand, and adding a small portion of finely-broken crocks or lime rubble, will suit them. Pot them firmly, afford good drainage, very little water, and a cool, airy house.

Bulbs.—Another batch of Dutch bulbs may be potted, in the manner advised in a previous calendar. Plants of Spiræa, Deutzia, and clumps of Lily of the Valley should also be potted-up. Lily of the Valley crowns are the better for being frozen before they are forced; and retarded crowns will be found preferable to the ordinary crowns, which seldom force satisfactorily before the New Year. Retarded clumps of Spiræa (Hoteia) are likewise very suitable for being forced at this date, needing very little warmth to bring them into flower. The potted bulbs which are at the present time covered with coal-ashes or Cocoa-nut fibre, should be occasionally examined, and those which have pushed up 2 or 3 inches in height, and have plenty of roots, removed to frames and pits, and shaded till the growth assumes the green tint, when they may be placed in heat at any time afterwards.

Libonias.—Those which are showing flower may be placed in the conservatory, in situation where cold draughts are not likely to reach the plants, the foliage being tender, and soon turning yellow, and dropping if checked by cold. The remainder of the stock of these plants should be encouraged by an occasional application of weak manure-water, and a temperature of 45° to 55°, air being afforded whenever the weather is mild.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Nov. 5	North Scotland Root, Vegetable, and Fruit Show. National Rose Society, at Hotel Windsor (2 P.M.). Royal Horticultural Society's Committees. National Chrysanthemum Society's Show at the Royal Aquarium, Westminster (3 days).
TUESDAY,	Nov. 8	Chrysanthemum Shows at Birmingham (3 days); Highgate (3 days); Yeovil; and Coventry (2 days).
WEDNESDAY,	Nov. 9	Chrysanthemum Shows at Bournemouth (2 days); Jersey (2 days); Wisbech (2 days); Hanley, Staffs. (2 days); Cardiff (two days); Liverpool (2 days).
THURSDAY,	Nov. 10	Harrogate Chrysanthemum Show (2 days). Cambridgeshire Horticultural Society's Chrysanthemum Show at Cambridge; Windsor, Eton and District Chrysanthemum Show; Sidcup (Kent) Horticultural Society's Chrysanthemum Show (two days).
FRIDAY,	Nov. 11	Chrysanthemum Shows at Nottingham (2 days); Leicester (2 days); Sheffield (2 days); Dalkey, Wilmslow, Cheshire (2 days); Bradford (2 days); Huddersfield (2 days); Altrincham, Bowdon, Sale and District Chrysanthemum Society's Show (2 days); Eccles Chrysanthemum Show (2 days).

SALES.

MONDAY,	Nov. 7	Dutch Bulbs, at Protheroe & Morris' Rooms. Clearance Sale of Greenhouses, Heating Apparatus, and Fittings, at the Avenue Nursery, Brondesbury Park, Willesden Lane, N.W., by order of Mrs. E. J. Goubert, by Protheroe & Morris.
TUESDAY,	Nov. 8	Dutch Bulbs and Continental Plants, at Protheroe & Morris' Rooms. Absolute unreserved Clearance Sale of Glass Erections, Apparatus, Fittings, Horse, Van, Utensils, &c., by order of the Trustees under a Deed of Assignment <i>Re</i> Biddles & Co., by Protheroe & Morris (2 days).
THURSDAY,	Nov. 10	Dutch Bulbs, at Protheroe & Morris' Rooms. Special Sale of Hardy Border Plants and Rare Bulbs, at Protheroe & Morris' Rooms. Important Sale of Nursery Stock, at the Portland Grange Nurseries, Matlock, by order of Messrs. Hurd, Sons & Co., by Protheroe & Morris (2 days).
FRIDAY,	Nov. 11	Clearance Sale, by Auction, of the whole of the Nursery Stock and Glass, on the Premises, Sky Peal's Nursery, Walthamstow, by Mr. H. W. Rendell, 99, Queen Street, E.C.
		Imported and Established Orchids, at Protheroe & Morris' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—43° 2'.

ACTUAL TEMPERATURES:—

LONDON.—November 2 (6 P.M.): Max., 59°; Min., 48°.
PROVINCES.—November 2 (6 P.M.): Max., 60°, east coast of England; Min., 55°, north-east Scotland.
Mild, stormy, rainy.

THE brief announcement made in our last issue that the judge of the County Court at Hastings had pronounced a decisive judgment on the question, What is an amateur? will have been read with much satisfaction. It appears that an exhibitor in the amateurs' classes was, in the first instance, awarded certain sums as prize-money. Payment of the prize-money was, however, refused on the ground that the exhibitor was not an amateur. The prize-winner protested, and sought a remedy in the County Court. It was alleged for the defence that the exhibitor in question was a dealer in plants, and issued a printed priced catalogue. This must have been proved to the satisfaction of His Honour, or he would not have given his

verdict against the exhibitor and in favour of the society.

If abundant experience did not show the contrary, we should have supposed that the exercise of common sense and good feeling, such as ought to animate all the Fellows of a society, would have precluded the necessity of invoking the aid of the law. Unfortunately, however, good feeling and *esprit de corps* vanish in the presence of self-interest, whilst common sense seems as difficult to define as the question What is an amateur? This latter point is often dealt with less as an abstract question than according to particular circumstances, and the proclivities and interests of individuals. We have known the same individual exhibitor approve of a particular restriction when it did not apply to himself, but vehemently condemn it when, in the opinion of the judges, he fell within its scope.

We have known instances where growers have systematically and regularly issued price-lists, and still considered themselves entitled to exhibit in the amateurs' classes, on the ground that they were only disposing of their surplus stock! We have also met designations such as that of "amateur nurseryman," a term surely as difficult of definition as a hybrid Tea-Rose!

Now, is it not the object of these "amateurs" to put money in their pockets, it may not be to make a profit, but to "help to cover expenses?" Wherever financial benefit is the object systematically sought and obtained, the grower becomes essentially a dealer, whatever he may call himself, and it is not fair to his brother dealers to accord him the privileges of an amateur. Of course, from the circumstances of their calling, few can know better than the directors of the horticultural press, which is the recipient of so many protests and complaints, published or unpublished, how difficult it is in all cases and in all circumstances to apply this principle strictly without some amount of real, apparent, or, most often, fancied injustice to particular individuals.

It is for the framers of schedules and bye-laws, whilst upholding essential general principles, to enact regulations to secure that no injustice be done to individuals, and to provide, as far as possible, for accidental contingencies. Of course, do what they may, they cannot provide by rule for all the contingencies that may arise, and hence the imperative necessity for exhibitors to submit loyally to the decision of judges and umpires. There must be confidence in the honour and competence of these officials, or nothing but confusion will ensue. An exhibitor who invokes the law by going into the courts cannot be surprised if his colleagues consider him as one who looks more to his own selfish interests than to the welfare of the society or the advance of horticulture. A Society, if there be such, whose decisions are habitually contested, would likewise not rank highly in the consideration of its Fellows or of the public; and such a state of things would point to the desirability of amending bye-laws, and of taking such steps as might be considered necessary to prevent such undesirable proceedings.

HYDRANGEAS IN THE AZORES.—I am sending you some very interesting photographs of Hydrangeas in the Azores. They represent one of the most remarkable instances of the acclimatisation of plants I know of. Hydrangeas were introduced to the Azores some thirty years ago. Now they form a series of hedges of the most beautiful character. The photograph (fig. 100), was taken by Miss ROSE POMEROY at Fayal, in July, 1897. D. Morris, Barbados.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Royal Horticultural Society's Committees will be held on Tuesday, November 8, in the Drill Hall, Westminster. A lecture on "Some of the Plants Exhibited," will be given at 3 o'clock by the Rev. Prof. GEO. HENSLOW, M.A., V.M.H.

NATIONAL ROSE SOCIETY.—The Honorary Secretaries of this Society, Rev. H. HONYWOOD D'OMBRAIN and EDWARD MAWLEY, Esq., Victoria Street, Westminster, S.W., desire us to announce that a meeting of the General Purposes Committee will be held, by kind permission of the Horticultural Club, at their Rooms, Hotel Windsor, Victoria Street, Westminster, on Tuesday, the 8th inst., at 2 P.M. The following matters will then come under consideration, viz., the alteration of bye-laws and regulations. Those already suggested:—1, that General Purposes Committee be appointed in December; 2, the reduction of the penalty as to duplicates; 3, new regulation as to the time of removal of the ties from blooms at exhibitions; 4, arrangements for the annual meeting and dinner. The Committee will meet at 3 P.M., to receive the report of the Committee for 1898, report of General Purposes Committee on suggested alteration of bye-laws and regulations, house-list of Committee and officers for 1899, and other business.

THE ROYAL GARDENERS' ORPHAN FUND.—The following special and other donations were announced at a meeting of the executive committee held at the Horticultural Club on the 28th ult.:—Ealing Gardeners' Society, proceeds of exhibition, £15; Sandringham Estate Cottage Garden Society, £5 5s.; Mr. R. McLachlan, Lewisham, £5 5s.; Trentham Horticultural Society, per Mr. P. Blair, £5; Miss Faulkner, Wimbledon Horticultural Society, £5; Mr. J. Selway, Betteshanger Gardens, Sandwich, £2 15s.; Mr. A. D. Christie, the result of opening the gardens at Ragley, Alcester, £1 13s.; Hesse Gardeners' Society, £1 4s. 1d.; Earl Dysart, £1; Mr. C. Sutton, Chevening Park box, 15s. 6d.; Mrs. Wills, 16, Onslow Crescent, S.W. box, 12s. 6d.; Mr. W. Miles, Southampton box 11s. 9d.; Mr. Parker, Stroud, 10s. 6d.; Mr. H. Burbidge, Weigate, 10s.; Mr. N. Kneller, Malshanger Gardens box, 7s. 6d.; Mr. J. Bendell, Ringwood, 10s. 6d. Were it not for these extra source of income the benevolent operations of the fund would be seriously curtailed; annual subscriptions, and especially from the gardener class, being an uncertain, and it is to be feared, a declining quantity. But while the gardeners about the country hesitate to subscribe, the mothers of the children who are periodically ceasing to be chargeable to the fund, owing to the operation of the age limit, write very cheering and encouraging letters of deep thankfulness to the committee for timely aid afforded at a time of grievous need. When will the gardeners of the United Kingdom, in whose special interest this fund was established, awake to the fact that they do not support the fund as they should do, and as it deserves to be supported? It was arranged that the annual general meeting and election should take place on Feb. 17. Several matters of detail were arranged, and the proceedings closed with a hearty vote of thanks to Mr. William Marshall, the chairman.

YORK FLORISTS' SOCIETY.—There was a full attendance at the White Swan Hotel, York, on the evening of Friday, October 28, on the occasion of the presentation of an illuminated address to the Rev. H. VIVYAN, who for four years has held the office of chaplain to the society, and who has had to resign that position owing to his acceptance of a living in Cornwall. Mr. J. PILLMOOR presided.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting of the Floral Committee on September 14 last, First-class Certificates were awarded to Mr. H. Hornsveld, of Baarn, for Canna Hofgartendirector Wendland, Cactus-Dahlia Arachne, C.-D. Capstan, C.-D. Keynes' White, C.-D. Standard-bearer; to Mr. T. E. Houtvester, of Utrecht, for Canna H. Wendland; to Messrs. E. H. Krelage & Son, of Haarlem, for Canna Stadtrath Heidenreich; Cactus-Dahlia Arachne, C.-D.

Capstan, C.-D. Daffodil, C.-D. Keynes' White, C.-D. Kingfisher, C.-D. Night, C.-D. Norfolk Hero, C.-D. Standard-bearer, *Montbretia crocosmiæflora* Ori-flamme; to Mr. W. van Veen, of Leiden, for Cactus-Dahlia *Arachne*, C.-D. Keynes' White; to Mr. B. Ruys, of Dedemsvaart, for Cactus-Dahlia Keynes' White; to Messrs. Groenewegen & Son, of de Bilt, for *Rubus sorbifolius*; to Messrs. V. Schertzer & Son, of Haarlem, for *Tagetes Lemon Queen*, and *T. Prince of Orange*. Certificates of Merit were awarded to Mr. T. E. Houtvester, of Utrecht, for *Chrysanthemum Harvest Home*; to Messrs. P. van Noordt & Son, of Bo koop, for Cactus-Dahlia *Koningin Wilhelmina*;

credit on horticulture in this country. It is understood that there will be periodical shows of flowers and fruit during the continuation of the exhibition. A sub-committee of the Royal Commission, consisting of the following gentlemen, has been formed:—Sir J. Trevor Lawrence, Bart.; Sir Edward Grey, Bart., M.P.; W. T. Thiselton Dyer, Esq., C.M.G.; Dr. Masters, Dr. Schlich, T. A. Dorrien Smith, Esq.; and Harry J. Veitch, Esq. The latter gentleman is the hon. secretary to the sub-committee, and any communications may be addressed to him, or to the Secretary, Royal Commission, Paris Exhibition, St. Stephen's House, Westminster, S.W.

and turn sweet naturally; and B, those which never lose their astringency unless subjected to "improvement." The simplest process is drying after removal of the rind. In other cases the fruits are packed in tubs previously moistened with saké (Rice-beer). The tubs must be as nearly air-tight as possible, and the fruit kept in them for fifteen days, when it is said astringency will have disappeared.

INSTRUCTION IN HORTICULTURE IN FIFE-SHIRE.—Dr. JOHN H. WILSON, St. Andrews, formerly Lecturer on Horticulture in the Heriot-Watt College, Edinburgh, is at present engaged in giving a



FIG. 100.—HEDGES OF *HYDRANGÆA HORTENSIS* IN THE AZORES. (SEE P. 336.)

to Mr. H. Hornsvelt, of Baarn, for Cactus-Dahlia *Loreley*; to Messrs. E. H. Krelage & Son, of Haarlem, for Cactus-Dahlia *Loreley*, C.-D. Stern von Schöneberg. *Lathyrus odoratus* Countess Powis, L. o. Lady Nina Balfour; to Mr. B. Ruys, of Dedemsvaart, for Cactus-Dahlia *Loreley*.

PARIS UNIVERSAL EXHIBITION, 1900.—The plans of the Horticultural Section at the Paris Exhibition of 1900, are now complete; from them it will be seen that it promises to be a very attractive building. Space has been secured for British exhibitors, and it is hoped that it will be filled in a manner to reflect

DIOSPYROS KAKI.—Among the most interesting exhibits at the last meeting of the Royal Horticultural Society were some fruits of this tree ripened (or on the way towards ripening) against a wall in the garden of Canon ELLACOMBE, at Bitton. In orchard-houses the fruit is very handsome, and if allowed to become blotted very agreeable in flavour; but let those beware who incautiously taste the noble-looking fruit before it is well blotted like a Medlar. In Japan there are very numerous varieties, the fruit of some being dried like Figs. In the catalogue of the Yokohama Nursery Co., the fruits are divided into two classes: A, those which ripen

series of lectures at twelve centres in Fife-shire. The course is under the auspices of the Fife County Council, the initiative having been taken by the horticultural societies of the county. The practical bearings of the science are carefully kept in view, and discussion freely invited. A deep interest is being taken in the course.

FLOWERS IN SEASON.—An extremely varied collection of *Chrysanthemums*, decorative, Japanese of different types, and Pompons, has been received from Messrs. DOBBIE & Co., Rothesay and Orpington; the flowers having apparently been gathered from

border plants. The beautiful colours, the variety of form, and the general floriferousness of the Chrysanthemum when it is allowed to grow unrestrained, and with, at the most, one cutting back in June of those whose stature is undesirably tall, are qualities unfortunately too little utilised by the gardener in the borders, or against walls and buildings.

DESTRUCTION OF CROPS.—From Mentone, under date October 30, we learn that a terrific hail-storm, which lasted but half-an-hour, swept over that district, and destroyed the splendid crop in the Olive and Lemon plantations. Abnormal weather would seem to have greatly damaged the Olive crop in various districts during the past month.

PRESENTATION TO ALDERMAN ROGERS, OF RED LODGE NURSERIES, SOUTHAMPTON.—This worthy gentleman, member of the Corporation of Southampton, and once Sheriff and Mayor of that town, has felt compelled by increasing years to retire from active participation in business, and his friends embraced the opportunity of showing their esteem for Mr. ROGERS by presenting him with a beautifully illuminated address. The presentation took place in the Mayor's parlour on Wednesday afternoon, October 26, several members of the corporation and other friends being present. The presentation was made by the Mayor; and Mr. ROGERS, in his reply, alluded to his seventy years' connection with the borough, having been initiated into public life by his father; and to the great changes that had taken place at Southampton in that period of time. He had, he said, placed his business on such a footing as he believed would ensure its being successfully carried on by his successors, and he also trusted that his son would live to enjoy the same measure of esteem at the hands of his fellow-townsmen as it had been his happy lot to achieve. Mr. ROGERS was at one time a constant and valued contributor to the pages of this Journal. He had a good knowledge of plants, and his nursery at Red Lodge was a well-stocked repository of choice trees and shrubs.

"**SELL'S COMMERCIAL INTELLIGENCE**" is a weekly newspaper entirely devoted to the spread of authentic commercial information; the price is one penny only. It will inform British merchants and manufacturers of new openings for foreign and colonial trade, and help them to meet the ever-increasing growth of foreign competition. Markets of the world, new and old, will be kept under constant survey, and from all parts of the globe special correspondents will inform the readers of *Sell's Commercial Intelligence* of the latest movements. The aims of such a paper as this commend themselves to business men as worthy of support, and the first number affords a guarantee of the spirit and enterprise with which the new journal will be conducted.

JADOO, LIMITED: ANNUAL MEETING OF SHAREHOLDERS.—The third annual meeting of the shareholders in Jadoo, Limited, was held at the office of the Company, Palace Gate, Exeter, on Wednesday, October 26. Col. HALFORD THOMPSON presided. The Company, as we learn from the report of the meeting, is pushing the business in Continental countries, and in the colonies, but the turnover was small, and seems scarcely satisfactory; and as the chairman said at the meeting, a sum of £4000 to £5000 was required to still further develop the concerns. They were, however, enabled to recommend a dividend of 5 per cent. per annum upon the paid-up capital. The sum of £200 1s. 4d. would be carried over to next year's trading.

GISHURSTINE.—With the advent of wet, cold weather, the gardener must be more than usually careful of his health, and nothing tends to greater freedom from coughs, colds, and rheumatic affections in those whose avocations oblige them to be abroad in all kinds of weather than strong, well-made boots and shoes, rendered waterproof with dubbing, and no better dubbing exists than that which we know of than that sold under the name of Gishurstine, by Price's Patent Candle Company, Limited, Belmont Works, Battersea, S.W.

CHISWICK.

THE Royal Horticultural Society's garden has at the present little to show in the way of flowers, if we except Chrysanthemums grown in a natural manner in the long border which faces the exotic deciduous shrubs. Here lately were to be observed dwarf early varieties of Japanese, Pompons, and decorative, full of flower if a little past their best in some instances, and dashed with the heavy rains in the case of others, but so floriferous as to make it a matter of wonder so few of these bright flowers are made use of in gardens. It may be of service if we indicate a few of the more striking and showy varieties.

American Star, pale flesh coloured, 2½ feet high; Ivy Stark, a little less tall than the first-named, of an excellent pale orange tint; Ruby King, 2½ feet high, crimson, very free; Madame Marie Mesae, of a pale pink, a continuous bloomer, a gem, 2½ feet high; Lady Fitzwygram, white, changing to pink, very free, 2 feet high; Madame F. de Cariel, a reflexed variety, deep golden-yellow; Roi des Precoces, of a deep rose-pink, very free, 3 feet high; Albert Chausson, crimson and gold, a very nice bloom, height of plant 4 feet; Précocité of Delaux, a small reflexed flower, of a bright crimson, also free; Anastasi, a rosy-pink, height 1½ foot; L'Ami Condorchet, pale lemon, 1½ foot high; White St. Crouts, a sport from the pink variety of that name. The last three are Pompons worth having. There were many others, but we must stop.

We shall be much interested in the outcome of the extensive trial of hardy annuals now just showing through the soil. Many species, which are seldom sown at this season, are being put under trial; and we hope the season and climatic conditions will be favourable to the growth of the plants. One cannot go round the gardens without noticing the extensive repairs to the glass-houses, which have been carried out during the past year; much of it, we understand, by the garden staff under Mr. Wright's superintendence. There remain but few structures that have not had the much needed repairs carried out.

A goodly proportion of the crop of Grapes in the big vinery is still hanging on the Vines, and the entire crop of Gros Colman in the narrow wall case, and it is a heavy crop not quite finished. We noted with much gratification, plenty of evidence of zeal tempered with knowledge and discretion in the management of the gardens, and the several improvements and alterations lately carried out.

NOTICES OF BOOKS.

FLOWER FAVOURITES: Their Legends, Symbolism, and Significance. By Lizzie Deas. (George Allen, 156, Coaling Cross Road.)

THIS is a dainty little book, containing verse and prose legends relating to well-known flowers. If these tales are all more or less familiar, that is scarcely the fault of the compiler, for nowadays there are many such books, and it is difficult to find any myths which have not been many times retold. *Flower Favourites* is pleasantly put together, the various quotations in it being introduced with skill, and the verses containing allusions to the blossoms well chosen. The following account of the Edelweiss may be new to some readers:—"According to a cherished Swiss legend, the Edelweiss was once a maiden—a maiden so fair of face, so pure of heart, so noble of mind, that although all men loved, not one was found worthy to win her for his own. And when, still unwed, she died, upon the mountain-top, enthroned amid snow and ice, transformed to a flower, she reigns as Edelweiss. And because through toil and bravery and upward struggle alone may the flower be found, 'to pluck the Edelweiss' has passed into a current saying, signifying to obtain the highest, noblest love that it is possible for mortal man to win—

"It is the type of ideal womanhood, Of all that is most pure, most beautiful, most good." As regards the Rose, Thistle, Shamrock, Leek, Lily

and many another popular flower, there is not much new to be quoted, especially as this is a selection only, in no sense a complete series of literary allusions. We learn that many of the chapters have previously appeared in various magazines, and for this they seem more suitable than for publication in book form.

ONE-AND-ALL GARDENING. A popular annual for Amateurs, Allotment-holders, and Working Gardeners. Edited by Edward Owen Greening. (Agricultural and Horticultural Association, 3, Agar Street, Strand.)

VARIOUS well-known horticulturists and gardeners have contributed practical articles to this handbook. Mr. D. F. Fish is responsible for the gardening calendar; Mr. Sanders and Mr. Wright for various papers on special subjects. The scope of the publication may be understood by its sub-title, and that the information given is reliable, and the result of experience cannot be doubted. The advice is plainly given, and if gardeners only could, and would read, comprehend, and put it into practice, there would soon be fewer of those jobbing-men, competent only to mow grass or roll paths. The annual includes many illustrations, and is altogether surprisingly cheap at twopence, which is the price asked for it. This "has only been rendered possible by the generous enterprise of the Council of the Agricultural and Horticultural Association, and mutual association of some 3000 members, founded twenty-eight years ago." It has certainly issued a useful work containing original and reprinted matter dealing with the various branches of gardening and allotment management.

DARLINGTONIAS.

THE photograph from which the illustration (fig. 101) was taken, represents one of six imported plants received in June, 1893, as single crowns. They were potted as soon as received into 5-inch pots in a mixture of fibrous peat, broken into small pieces, and sphagnum-moss chopped finely of about equal quantities in bulk, with crocks and charcoal the size of small beans, forming one-third, and a good sprinkling of coarse silver-sand. This compost I always make use of, as the large quantity of water required for the successful culture of these plants renders it necessary that the rooting medium be of a very open character. The pots are filled to one-third of their depth with clean crocks, and over them is placed a layer of sphagnum moss. The crown of a plant is kept fully an inch above the rim of the pot, and the compost is rounded up as in the case of most species of Orchid and finished with a thin layer of chopped sphagnum-moss. This layer soon begins to grow, and imparts a tidy and pleasing appearance to the plants.

The plants are watered thoroughly every day throughout the summer, and three times a week during the winter. I do not advise standing pots in saucers, but prefer to make daily and copious applications until it runs from the plants like a shower-bath.

The house where they are grown has a west aspect, is very light, the panes of glass measuring 24 inches square, and fire-heat is only applied to keep out frost and extreme cold, and damp from other occupants of the house. No shading is necessary, as the sunshine tends to bring out the mosaic-like markings of the pitchers. They are placed at the north end of the house over the water-tank, close to the door, which stands wide open all day long summer and winter, unless when the weather is very severe or windy. It is very essential that they get an unlimited supply of fresh air, as they seem to enjoy the wind blowing through the pitchers. This is the position in which I have found them luxuriate after several failures in close greenhouses and cold frames—for coddling they will not bear.

Repotting must be done annually, as owing to the great amount of water required, the compost gets soured and muddy, and must be entirely renewed once a year, or failure will result. About the end of January or February is the best time, that is, just before they begin to develop their first and principal crop of pitchers and flowers. Water is withheld from

the roots for a few days, for if the compost is on the dry side it falls freely from the roots without the slightest injury to them. Have pots and compost, &c., ready, and proceed to repot, taking care that the roots are placed in a natural position; fill in with the compost and make firm, without bruising the roots, finish as already indicated, remove to their quarters, and afford a thoroughly good watering with a coarse rose, and follow out the daily routine.

Propagation is readily effected by offsets. The rhizomes travel round the side of the pot, eventually emerging close to the top edge, and producing a tuft of small pitchers. Carefully remove the compost, and trace the rhizome and sever it beyond a joint with roots. I prefer rhizomes about 6 or 8 inches in length when transferring to fresh pots, twisting or bending them so that the little pitchers are in the centre of the pot. Place them with the established plants in an airy position. On no account place them in close frames or under bell-glasses. The culture of these plants is exceedingly simple, given three conditions: a cool airy position, abundance of water, and renewal of the soil once a year, and then success is certain. They are objects of great beauty and interest all the year round, and they also flower every year in May or June, the flowers being produced singly on long slender stems as in *Sarracenia*s. They are of a dark crimson colour, both beautiful and interesting. A. J. A. Bruce, *The Nurseries, Chorlton-cum-Hardy, Manchester*.

HOME CORRESPONDENCE.

HYBRID FAILURES.—I shall be greatly obliged to any raisers of hybrids or varieties by crossing (not spontaneous seedlings), who will tell me of any species which has failed to take the pollen of any other species, or of any variety of a species which could not be fertilised by crossing it with some other variety or species. I should like also to record any plants which could not be fertilised by their own pollen, or with pollen of other plants of the same species. *George Henslow, 80, Holland Park, W.*

AMARYLLIS BELLADONNA VAR. KEWENSIS.—On comparing the engravings in *Nicholson's Dictionary of Gardening* (figs. 75, 76) with those of the *Gardeners' Chronicle* (fig. 93), I have a suspicion that the artist for the dictionary has been allowed to figure this grand variety as an illustration of the common form of *A. Belladonna*. Is there anything in the form of the bulb to distinguish this hybrid from the common form, of which *Amaryllis* there are two well-marked varieties, the larger one coming into flower generally a week to a fortnight before the other, and being about 6 inches taller? I had often remarked this in the gardens of friends, and can now confirm it in my own garden. *W. Thomson, Bishop's Teignton*.

CHRYSANTHEMUM-RUST.—Referring to Mr. Godfrey's letter in your last issue, we do not think that his rather sweeping assertion as to the universality of the disease should be allowed to appear uncontradicted. We ourselves received diseased plants in the spring from several sources, but by careful quarantine and constant treatment with fungicides, succeeded in getting rid of it; and we believe our collection is absolutely clean at the present moment, and there may probably be a number of others equally fortunate. *J. R. Pearson & Sons*.

NATIONAL CHRYSANTHEMUM SOCIETY.—A perusal of your leading article under this heading on p. 320 leads me to infer that your information on some points is not quite correct. From certain knowledge, I am able to state that it is financial considerations mainly which have actuated those who have sought to remove the exhibitions of the Society from the Royal Aquarium to the Crystal Palace. They have put forward the plea that the sum annually received from the Directors of the Royal Aquarium is an altogether inadequate contribution from the profits derived by the Directors from association with the National Chrysanthemum Society. The majority of the executive, among whom were several of the leading exhibitors, appeared to hold that the central position of the Aquarium, the ready access to it from all parts of the metropolis, the fact that the exhibitions there are now well-known London fixtures, the knowledge that the association

of the Society and its exhibitions with the Aquarium, has done so much to enhance its success and prosperity, added to other advantages, outweighed merely financial considerations, hence the emphatic vote against the change. Nor is it quite correct to say that the sub-committee, which consisted of nine members, "almost unanimously recommended" a change to the Crystal Palace. The chairman of the Executive Committee, the Treasurer, and the Foreign Corresponding Secretary, members of the sub-committee, were opposed to any change, and also the general Secretary, whose vote was not recorded, but who, with the Treasurer, is among the oldest members of the Society, opposed the change. Surely Mr. Dean's long experience of the working of London flower-shows counts for something. I understand that the five elected members of the sub-committee, in addition to the four *ex officio* officers, all of whom recommended the change, were well-known opponents of the policy of holding the shows at the Aquarium, and were nominated on the sub-committee in order to ensure a majority in favour of a change. In reference to your remark as to the "great need of an independent horticultural Institute in London, where all the societies could be accommodated," I am led to infer that you include their exhibitions. This has led me to obtain from the Secretary of the National Chrysanthemum Society the amount of table and ground-space

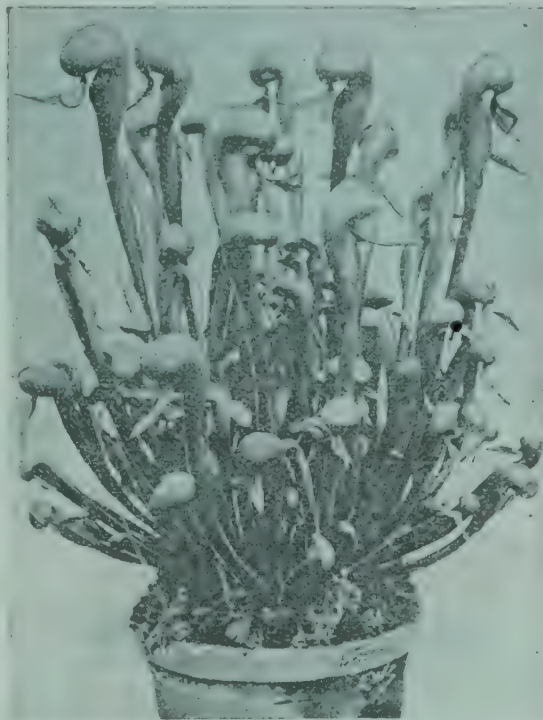


FIG. 101.—A SPECIMEN PLANT OF DARLINGTONIA CALIFORNICA. (SEE P. 338.)

occupied by exhibits at the recent October show of the society at the Royal Aquarium, and he informed me that 3062 superficial feet of tabling was required, and 1018 superficial feet of ground space, making a total of 4080 feet, and this does not include the ground covered by the exhibits of horticultural requisites, or what was staged in the western gallery. To this must be added quite 5000 feet at least for gangways for visitors and clear ways to all exits (the London County Council being very exacting on this point), and so a hall, at least 180 feet in length, by 50 feet in width, is requisite for such an exhibition as that held in October, leaving out of the question of seating accommodation, band stands, &c.; and this October show represented about one-third of the space which will be required for the great November exhibition to be held next week. *A Member*.

THE PRONUNCIATION OF FOREIGN NAMES.—The pronunciation of such long and uncouth names as are often given to Chrysanthemums raised abroad, is a stumbling-block to the average English gardener. It cannot be expected that young men in gardens, or even the chiefs, can be sufficiently well versed in the French language as to be able to pronounce the words perfectly. The attempted pronunciation of many French names by gardeners is a common source of merriment—on the quiet—to employers and to the junior members of the family. Until English raisers are in the ascendancy with new varieties, we cannot

expect a better selection of names. It is too much to expect a Frenchman to adopt English names for varieties of his own raising, the names of which have a charm in some way or another. Seldom, indeed, does an English-raised Chrysanthemum receive an objectionable name, certainly not one difficult of pronunciation [to an Englishman]. As a rule here, the flowers are named after the raiser or the name of the place. American or Australian-raised varieties receive, as a rule, simple names. True, individual cases of a disposition to exhibit peculiarities of name occur very often, though these do not commend themselves for a lengthened period. In former days, before the Japanese section was instituted, there were hardly any foreign varieties—there was then nothing but plain English names. What could be more easy than Alfred Salter, Empress of India, or even Lord Alcester, of more recent introduction? Directly, however, the increase of Japanese varieties becomes the main, and sometimes the sole, object of certain specialists, we are flooded with—to an ordinary, or, as the late Mr. Wildsmith so often said, a common gardener—names impossible of proper pronunciation. A glance through a Chrysanthemum specialist's catalogue at the present day reveals, perhaps, an improved order of things, as owing to the advance made in the number of English-raised varieties, the lists are much easier of management, and they contain names of easy pronunciation. If Chrysanthemums are to receive French names, as the raisers have a perfect right to bestow, all that we can do is to entreat them to adopt shorter names than the following, for example, Comtesse Jean de la Rochefoucault, Deuil du Tzar Alexandre III., Baronne Dutheil de la Rochère, or Lucile Mahieu de la Drome. None of these are easy of pronunciation to an Englishman, even for a person of education beyond that which falls to the lot of an average gardener. *E. M.*

BEGONIA GLOIRE DE LORRAINE.—When recently visiting the gardens at Luton Hoo, which are under Mr. George Maycock's charge, I noticed a well-grown lot of plants of this fine, late-flowering Begonia. The plants were growing in 48's, and bore healthy foliage, and numerous flowers and buds from top to bottom. The plants stood from 2 to 2½ feet in height, and measured about 2 feet through. They formed loose pyramids. When grown as these were, Gloire de Lorraine forms a striking object. Mr. Maycock told me that his plants were struck singly in small thumbs early in the spring of this year in a mixture of leaf-soil and sand, and during the summer they were placed in a Cucumber-pit, the moist atmosphere of which, and the daily syringing they received, kept red-spider, which often infests the Begonia, in check. When showing flower he removed the plants to cooler and lighter quarters, slightly shading them. *J. Wilson, Greenside Nursery, St. Andrews*.

CASSIA CORYMBOSA.—I enclose a few sprays of *Cassia corymbosa* for you to see how very useful the plant is for making an outside display. I have some large standard plants of it, from which I cut the sprays sent. They are growing in the flower-pots sunk in turf on the lawn, and were put out-of-doors in May, being at that time in bloom, and they have continued in bloom ever since, and they look well now, as you will see by the enclosed; one seldom sees it grown much for outside. *A. B.*

THE AUTOCRAT PEA.—This Pea has done well this autumn, as you will see by the pods sent. The seed was sown on July 4, and I have gathered a splendid lot of pods from that sowing. It is a splendid Pea for an autumn crop. *A. Bateman, The Gardens, Brixworth Hall, nr. Northampton*. [The flavour was excellent. *Ed.*]

THE REMOVAL OF FRUIT TREES.—The season is close upon us when the lifting and transplanting of trees and bushes will be engaging the attention of the gardener; and this season, in more than an ordinary degree, great care will have to be exercised in England in the removal of roots from the soil. The drought has rendered the soil extremely dry and hard, and what rains have fallen in most parts of the country have been so small in quantity as to have been entirely absorbed by the upper crust, leaving the soil at 9 inches and more in depth unmoistened. Where, on digging down to the level of the roots of trees and bushes, this is found to be the case, especially in wall-trees, a copious application of water should be made a day or two previously to commencing the work of removal. This will enable the gardener to get out the roots, big and little, without much loss. And on the completion of each transplantation, water should be freely applied, a mulch being put over on the approach of frost, or immediately following the

watering. For all stone-fruits growing in soils not naturally containing lime, I always employ mortar-rubble finely broken up, or, failing that, slaked lime in the soil, and unslaked on the surface. *H. Markham, Northdown, Margate.*

PEACH SEA-EAGLE.—I have here a small tree, four years old, of the Sea-eagle Peach. The tree carried seventy-five fruits this year. They were all nicely coloured fruits, and weighed from 8 to 12 oz. each. The tree is on an open wall having a south-west aspect. I have had Peaches from the last days of April until the first week in November, which is no bad record for a gardener belonging to the "old school." In the training of our Peach and Nectarine-trees we take considerable pains, always striving to keep the trees thin of wood, also judiciously thinning out the leaves, so that the sun may exert free influence upon both wood and leaves, which, with copious supplies of water from time to time, is absolutely necessary for the maturing and plumping up the fruit-buds ready for the next year's fruitage. These matters properly attended to will give little cause for anxiety as to the dropping of buds when the rise of the sap begins. I am not prejudiced in favour of my own method of the treatment or management of Peach-trees, and would be pleased to adopt any other, provided it would produce better results, but the method briefly described above, has been carried out here successfully for near upon forty years, and as no more than one crop of fruit can be produced from any one Peach-tree in the course of one year, and having satisfied myself that I have done this, I leave it to the so-called experts with their newer methods to say how they can do more. Subjoined is a list of present dessert: Grapes, Peaches, Melons, Figs, Guava, *Passiflora edulis*, Red and White Strawberries (alpine in great plenty), Pears, Apples. *W. Miller, Combe Abbey, October.*

THE ROOTS OF ODONTOGLOSSUM VEXILLARIUM.—Is it the general experience of your readers that *Odontoglossum vexillarium* roots die outright after the first year's growth? My experience is that they do not, but that under proper treatment they grow again from the points of the one-year-old roots, and the same thing happens for several years in succession. If they did not do this, of course they would lose their leaves like *Calanthe*, which are deciduous. I read a paper on the cultivation of *Odontoglossum*, and this particular one included, and several of the members present were of the opinion that the roots of *Odontoglossum vexillarium* were of no further use after the first year, and might as well be cut off. I think otherwise, and said so at the time. I should be glad to know if I am right in my contention. *H. M.*

THE WHEAT CROP OF 1898.

WE are indebted to Sir J. B. LAWES, Rothamsted, for the following summary of the Wheat crop for 1898:—

"During the first week of September (1897), there was a heavy fall of rain over most of the Wheat growing districts of Great Britain, after which there was no rain sufficient to hinder operations in the field until the second week in December. September and the first half of October were below average as to temperature; while the latter part of October, and nearly the whole of November, were unusually warm. Altogether there was a perfect seed time. There was pretty generally an excess of rain during the first half, and towards the end of December, and again early in January, after which there was a great deficiency until the second and last week of April.

With the deficiency of rain the temperature was considerably above the average in January, and during the greater part of February; whilst the end of February was cold, as also, with some warm intervals, were March and April. In May there was a considerable excess of rain, with almost throughout lower, and sometimes much lower, than average temperatures. In June the weather fluctuated very much, the first and third weeks being cold, and the second and fourth warm. More or less rain fell during the earlier and later portions of the month, with scarcely any during the middle, and at Rothamsted, and in some other districts, the total for the month was about three quarters of an inch below the average; there being not sufficient to injure the hay. In July there was almost throughout lower than average temperature, with considerably less than average

rainfall, excepting thunderstorms locally towards the end. The cold weather, accompanied with high winds, laid a good deal of Wheat at an important period of its development, the Rothamsted experimental crops suffering very much. The rain during the first fortnight in August was very partial, consisting chiefly of thunder showers; the last half of August was very hot and dry, and very similar weather continued up to the end of September, the rainfall for that month being unusually low.

So great has been the deficiency of rain from the beginning of the year up to the present time, that in our Wheat-field which is pipe-drained, by which we are enabled to determine the loss of nitrate in the drainage, no water has passed since early in January; and for only the second time during a period of more than 40 years, the Wheat plant was much injured where we have used the heaviest dressing of nitrate of soda, for want of enough rain to form and distribute a sufficiently dilute solution of it; and a similar result also occurred in the year of drought in 1893; whilst in this year, 1898, the Barley plant was much injured with only half the amount of nitrate applied. The immense hay crop grown all over the country was probably due, not only to the abundance of rain in May, but also to an unusual accumulation of nitrate within the soil during the previous autumn and early months of the year, with much less than the usual amount of rain to wash it out.

After such a very favourable seed time, sufficient rain in December and the beginning of January, but afterwards very little and generally over average temperatures during the winter months, the experimental plots showed unusual luxuriance early in the year; and indeed up to June the field showed much more growth than usual, illustrating the effects of the different manures in a very striking manner. In fact, there was, as the results showed, too much above ground growth, with deficient rooting. Under such conditions of early growth, the following results were finally obtained on the selected plots:—

Years.	Unmanured, Plot 3.	Farmyard Manure, Plot 2.	Artificial Manures.				Mean of Plots 3, 2, and 7, 8, 9 (or 16).
			Plot 7.	Plot 8.	Plot 9 (or 16)	Mean.	
BUSHEL OF DRESSED GRAIN, PER ACRE.							
Present year, 1898 ...	12	38	28½	29½	23½	27½	25½*
Averages:—							
10 years, 1888-97 ...	12½	40½	34½	37½	33½	35½	29½†
36 years, 1852-87 ...	13	38½	32½	36½	36½	35½	27½‡
46 years, 1852-97 ...	12½	35½	33½	36½	36½	35½	27½§

WEIGHT PER BUSHEL OF DRESSED GRAIN IN POUNDS.							
Present year, 1898 ...	61½	61½	60½	60½	60½	60½	61½
Averages:—							
10 years, 1888-97 ...	60½	61½	61½	61	60½	60½	60½
36 years, 1852-87 ...	58½	60½	59½	59½	59	59½	59½
46 years, 1852-97 ...	58½	60½	60	59½	59½	59½	59½

TOTAL STRAW, CHAFF, &c., PER ACRE, IN CWTs.							
Present year, 1898 ...	12½	55½	44½	54½	33½	44½	37½
Averages:—							
10 years, 1888-97 ...	8½	37½	31½	39½	35½	35½	27½
36 years, 1852-87 ...	11	31½	33½	40½	41½	38½	27
46 years, 1852-97 ...	10½	33	32½	40½	40½	37½	27½

* Equal to 26½ bushels at 60 lb. per bushel.

† Equal to 29½ bushels at 60 lb. per bushel.

‡ Equal to 27 bushels at 60 lb. per bushel.

§ Equal to 27½ bushels at 60 lb. per bushel.

It will be seen that the unmanured plot gave more, and the farmyard manured, and the two ammonia plots (7 and 8), very much more straw than the average of the preceding 46 years, whilst the nitrate of soda plot gave much less than its average. In fact, the farmyard manured plot yielded more straw than it had ever done before, and plots 7 and 8 had only in a few years given more. The nitrate plot had, however, only in a few years given less straw, the lowest amount being in the year of drought 1893; and it

had generally given much more than this year. It will be seen, that notwithstanding the unusual production of straw, the unmanured plot yielded less, and each of the three artificially manured plots, especially the nitrate, much less grain than their average; whilst the farmyard manured plot yielded even more than its average over the 46 years, but less than over the last 10 years.

The general result is, that the average yield of the selected plots shows less than average produce of grain. In fact, the wet and cold weather of May which contributed so largely to the bulkiness of the hay crop, also favoured the over-production of straw in the Wheat. Then followed much less than the average rainfall in June, but the temperature was very variable, and there was occasionally a good deal of wind. The result was that great injury was done, especially to the heaviest crops at the most critical time, and they were much laid before the ear was well developed and filled.

From the facts stated, it is obvious that, although in their early stages the experimental plots showed great luxuriance, they suffered in a very unusual degree from inclement weather before and about the time of blooming. It is seen then that whilst the experimental results indicate much more than average produce of straw, they show less than average yield of grain, due mainly to the low yields on the artificially manured plots. It is true that the farmyard manured plot, notwithstanding the crop was badly laid, yielded more than its average produce of grain; though taking the average of many years, the artificially manured crops yield as much or more grain than the farmyard manured plot, the artificial manures generally yielding the most in normal or good years, and the farmyard manure most in unfavourable seasons. This year, however, owing to the character of the season, the artificially manured crops were damaged in a very unusual degree. As the yield of the artificially manured crops, which suffered so much more severely than the farmyard manured crops, affects the calculated average so materially, it is considered that the mean result cannot this year be taken as representing the average yield of the country, as in fairly normal seasons it has done so remarkably for many years past. It is, therefore, decided not to use it as the foundation of an estimate of the crop of the country. As further illustrating the exceptional character of the Rothamsted experimental results, it may be stated that two fields farmed in the ordinary way, yielded respectively, 41½, and 32½, bushels per acre; the crop yielding the larger produce having stood up well, and that giving the smaller yield having been partially laid.

The prominent characteristics of the season were in the main very similar throughout the chief Wheat-growing districts of the country. The reports published from time to time of the progress of the Wheat crop, almost uniformly indicated a very heavy produce of straw. But the earlier reports record many complaints of laid crops, rust, blight, and small ears not well filled; and doubts are expressed whether the yield will be equal to what might be expected from the bulk of straw. Nevertheless, as the season advanced, and harvest progressed, the majority of the estimates showed an expectation of over average yield of grain per acre, if not an adequate yield in proportion to the straw. Reports of actual threshings are, however, comparatively few; but upon the whole the later records are more favourable than the earlier; and there can be little doubt that there will be more than an average yield of grain per acre over the country at large.

Since the above was written, there has appeared a further report in *The Times*, said to be founded to some extent upon the yields from the threshing-machine, and the general indication is stated to be that, for the whole of Great Britain, the yield will be about 35 bushels per acre. It may be of interest to observe, that supposing future threshings should confirm an estimate of about 35 bushels per acre for the United Kingdom, the requirements from imports would be from 21 to 22 million quarters."

CRACKING OF PEARS AND APPLES.

THERE is a fungus named *Fusicladium dendriticum*, from the tree-like markings it makes on the leaves (see figs. 102, 103). The same fungus attacks also the fruits; it burrows beneath the rind, feeds on its substance, and ultimately kills it, and destroys its elasticity and power of expansion. As the cellular tissue in the interior grows, and becomes fuller and fuller of water, it presses on the rind, which is no longer able to expand in harmony with the subjacent layers, and therefore cracks. Spraying with weak Bordeaux Mixture two or three times during growth would obviate this mischief.

CHRYSANTHEMUMS.

WOODHATCH LODGE, REIGATE. — The splendid collection of Chrysanthemums at this well-known residence of T. B. Haywood, Esq., is this season as good or better than ever. Mr. Salter, the painstaking gardener, who cultivates with praiseworthy success each department of his charge, has arranged them as usual in the lean-to houses adjoining the Orchid-houses. This season the remarkable number of Australian varieties in the collection is a feature. Some of them, including John Pockett, a crimson Japanese incurved variety with buff reverse, are evidently destined to become popular, but of John Pockett it is too soon to speak circumstantially, except to say that the colour is one that is afforded by very few of the newer or old varieties. Nellie Pockett (First-class Certificate) is a white Japanese that will compete with the very many new varieties of this colour. It is reputed to have taken honours as the premier bloom in two Australian exhibitions last season. Mr. T. Carrington, magenta-coloured, with silvery reverse, from the Antipodes also; and Pride of Stokell, a brownish-red sport, with bronze reverse, from Pride of Maford, may also be mentioned as some of the colonial constituents of the collection. Turning to the other varieties, there are some very fine blooms of Mrs. W. H. Lees, the recurring florets hanging a considerable depth; whilst another white Japanese, and one of the very best of its section, Mrs. J. Lewis, is represented by some beautiful specimens. That splendid Japanese incurved, Robert Owen, was never so good in Mr. Haywood's collection as this season. Robert Powell, a large, globular-shaped flower, with capital petals of a shade of chestnut, was remarked as a good one. Princess Helene is a white Japanese, with a decidedly lemon-coloured centre, the flower being composed of very wide petals. Lady Ridgway is capital, and Lucille de la Drome may be mentioned as a new yellow-flowered incurved, but the blooms are rather flat at present, being not fully developed. Speaking of incurved varieties, we are reminded that many of these are represented by large, well-built blooms of grand quality; but generally, though very promising, the incurveds were not at their best when we saw them.

Among the larger Japanese varieties, one could not but admire the pure reflexed blooms of Dorothy Gibson, probably the best of this latterly-neglected section. The most brilliantly-coloured flowers in the whole collection were some of that first-rate Anemone flowered variety Descartes. There were many additional novelties in excellent condition, including another pure white Japanese, Mdle. G. Seince (Calvat), and Mrs. F. Brewer, bright gold-coloured; but sufficient has been said to indicate the excellence of the collection, and the degree of success that has rewarded Mr. Salter's cultivation. Generally, the plants are a little taller than in an average season. A number of plants of the pretty Pompon varieties, about 3 feet or less high, and in 6 or 7 inch pots, are very attractive, and make good decorative plants.

MR. W. WELLS, EARLSWOOD.

The redoubtable Mr. Wells, of Earlswood, near Redhill, has a collection of Chrysanthemums as large as usual. He has honestly confessed to an encounter with the "rust," but triumphantly claims that he has found a means to keep it at bay (see p. 314, col. 3). Mr.

Wells is, of course, a trade grower, and the continued enthusiasm and success to be observed in such establishments, being a reflection of the public demands, it will apparently be some time before the Chrysanthemum-grower need look for another plant to succeed to popular favour. One of the most striking of the varieties in Mr. Wells' collection is Japanese Mrs. White Popham (Silsbury). It has

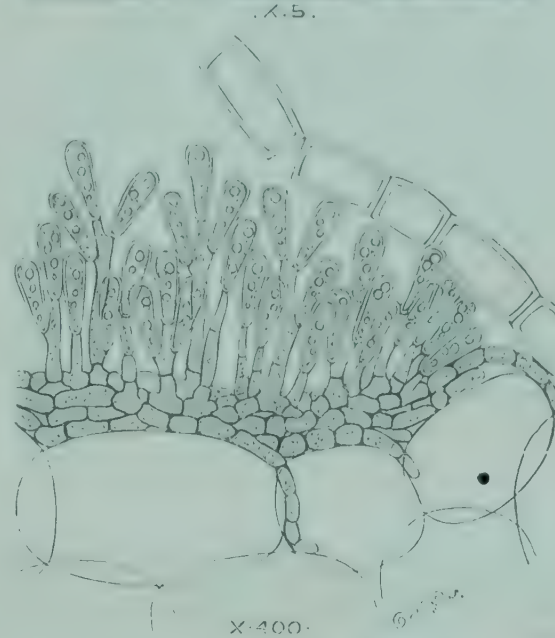
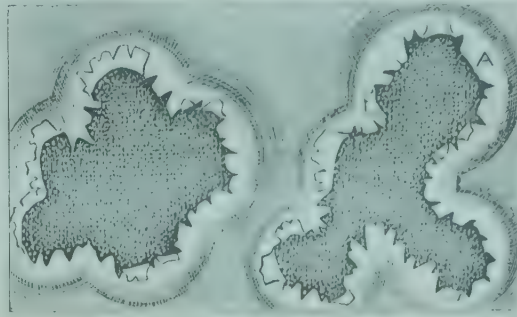


FIG. 102.—CLADOSPORIUM DENDRITICUM.
Upper figure magnified 5 times; lower figure shows a section magnified 400 diameters.

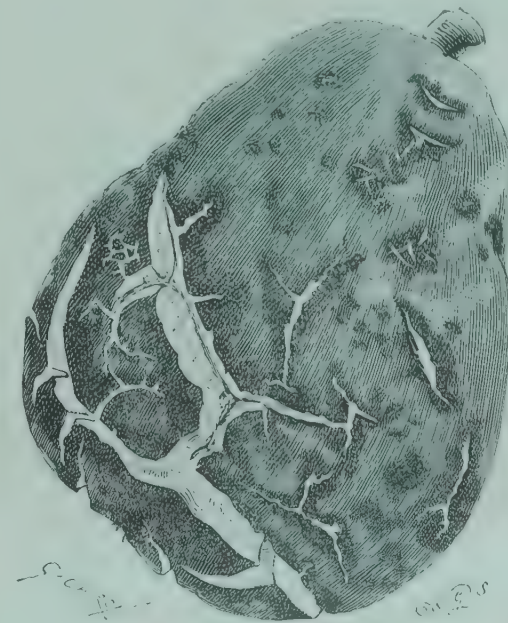


FIG. 103.—CLADOSPORIUM DENDRITICUM ON THE PEAR.
(CRACKING OF PEARS AND APPLES.)

wide drooping florets, exhibiting white and purple colour, varying in a wonderful degree according to the bud that has been "taken," and whether the plant has been grown late or early in the season. It has been awarded a First-class Certificate by the National Chrysanthemum Society. Mrs. J. W. Barks, the new bronze-coloured sport from that most

lovely and popular variety Edith Tabor, was noticed in fine condition. Madame Robert de Massey, a new one from Calvat, is rather small apparently, but the rich crimson colour will be welcome. The many white Japanese novelties are further increased by one named Mdle. Madeleine Expulsion: the white is very pure, but it remains to be seen whether the variety has superior claims. Chatsworth is a new white Japanese, with lilac-striped, drooping petals; it will probably be a desirable exhibition variety. General Paquet is a new Japanese of beautiful chestnut colour, reminding one of Col. W. B. Smith. Le Grand Dragon, already exhibited last week, has rich golden-coloured flowers, from second crown buds. Ed. Molynaux has another rival in Jos. Chamberlain (Davis); this new variety is exceedingly bright, but scarcely, we think, so wide in petal as the first named variety. Mr. T. Carrington, Melucine, Nellie Pockett, and John Pockett, already mentioned in the above note upon the collection at Woodhatch, are observed here also. Another one from Australia, at present known only as Seedling 150 (Pockett), is a yellow Japanese, marked irregularly with red. This variety appeared to us to be capable of making a first-class exhibition flower. Next was noted The Convention, which is similar to Col. Smith, but has broader petals. Gertrude Salter, a novelty in the way of Duke of York, and Leocade Gentils, a pretty lemon-coloured hirsute variety. It will probably be found a good addition to the "hairy" section. There were some particularly good blooms of Ella Curtis.

Out-of-doors, but protected somewhat by a frame, were masses of the glorious October-blooming varieties. Side by side with Mychett White was the new Market White, a later bloomer it is stated than the former, and easier of cultivation. This has been awarded the Certificate of the National Chrysanthemum Society. Mychett Beauty (First-class Certificate) might be described as a golden-coloured Mychett White. It will most likely prove one of the best yellow-flowering October bloomers. There is Madame Ligne Ligneau, a true Japanese rich yellow-coloured October-flowering variety, that would be useful for decorative and market work. R.

CASTLE HILL NURSERY, MAIDENHEAD.

This nursery has been famous in the past owing to the many good varieties sent out by the late Mr. R. Owen, who was one of the first to produce seedlings from English-saved seeds. The same enthusiasm is still displayed by his two sons, Mr. W. and Mr. R. Owen, who carry on the business; and numbers of seedlings are still raised annually, several promising ones being now in bloom, of both Japanese and incurved varieties. The following are well represented, and many others are partially open and give promise of good things to come, viz., President Bevan (Calvat), clear lemon-yellow, dwarf habit; La Moscovite (Lacroix), rosy-lilac, dwarf, and early flowering; Mrs. J. W. Barks, a light bronze sport from Edith Tabor; Comte Gabrio Casati, an Italian variety of a rich plum-colour, a promising novelty. Of the primrose sports from Madame Carnot, grown here under the respective names of Yellow Madame Carnot, Mrs. Mease, G. J. Warren, and Primrose Madame Carnot, all appear to be identical, or so near to each other in colour as to preclude any two being staged as distinct; and it is to be hoped that a name may be finally given this fine primrose-coloured sport from the most popular Japanese Chrysanthemum for exhibition purposes. [Mrs. Mease and the yellow sport from Mme. Carnot are very distinct. Ed.]

A seedling from Mrs. F. Brewer was very like Mrs. J. W. Barks, but of a deeper colour and with a larger flower, distinct, and much dwarfer in habit than the last-mentioned variety. This is to be christened General Kitchener, and will be a decided acquisition in a stand of cut blooms. Royal Standard (Owen), bright maroon; Mrs. Winkeley Smith, deep yellow, dwarf habit; Mrs. A. G. Haines, a dwarf incurved yellow Japanese; Countess Grey, an early-flowering pure white; Owen's Memorial, crimson, golden reverse, rather tall; Princess Charles of Denmark, deep golden-yellow; Lady Phillips may be described

as a very dwarf-growing Madame C. Audiguier, and was recently awarded a First-class Certificate by the National Chrysanthemum Society. Among incurved kinds, Miss Godsmark is a large and promising variety, with broad incurving florets, of a coppery-fawn colour—a desirable addition to this class; Ada Owen, a large, broad-petalled, pure white, a dwarf grower, and recently awarded a Certificate; and, lastly, an Italian novelty, which may be described as an incurved E. Molyneux, the flowers produced on 2 feet to 3 feet stems. C. H.

HEDSOR.

Among private establishments, Lord Boston's garden at Hedsor is known locally for the excellent culture of some hundreds of plants for exhibition blooms of the Japanese, incurved, and Anemone sections, besides large batches for general decorative purposes at home. Here the Chrysanthemum-rust has this season made its appearance for the first time, and some varieties are badly affected. Among Japanese, very fine blooms were noticed of Emily Silsbury, Phœbus, Madame Carnot, Australian Gold, Chas. Davis, Mrs. G. W. Palmer, Yellow Madame Carnot, Oceana, Eva Knowles, Edith Tabor, and several others. C. H.

THE RYECROFT COLLECTION.

Mr. H. J. JONES' plants will be at their best in a very few days, for when we visited the collection at Lewisham during the present week many of the varieties were already represented by blooms in the latest stage of development. Mr. Jones is so well known that we need not say much upon the extensiveness of his collection. Like most of the trade growers, he has novelties from almost everywhere, and a goodly number of home-raised seedlings and sports. There are few trade establishments at the present time that have to contend against the disadvantages inseparable from an urban situation in a greater measure than has Mr. Jones, and it is a great point in favour of the Chrysanthemum as a townsman's plant, that he can succeed to flower his collection so successfully as he does.

Our attention was first attracted by a batch of plants representing most of M. Calvat's novelties, such as M. Fatzer, an incurved Japanese, colour yellow; General Paquie, reddish-buff, or orange-red, as some describe the colour; President Bevan, Le Grand Dragon, and Marie Calvat. Most of these have already been exhibited from various collections, but we had not previously seen the last-named variety: it certainly promises to make a capital white or pale pink Japanese flower. A considerable number of growers this season have found many of the buds to be "hard;" such is the case at Lewisham, the continental varieties having opened less kindly than could have been wished. The most distinct of the continental varieties we have seen as yet is Rayonante; it has been certificated. The quilled petals are a pretty tint, that might be described as a lilac-tinted pink. Quilled-petalled varieties are not always satisfactory, but this large ray-like flower will be sure to become a popular one. Since Madame Carnot sported yellow, and gave G. J. Warren, the variety has again sported, and Mrs. W. Mease is a beautiful pale primrose form of the type, quite distinct from the yellow or the white variety. Those who admire the fine white Japanese Mrs. W. H. Lees, may now obtain a yellow sport from the variety. Mr. Jones has this sport, and whilst speaking of such variations, it is interesting to record the circumstance that the hitherto constant Ed. Molyneux has at last given a yellow sport. It is a good tint, and those who like the habit and foliage of its parent, will probably give the yellow-flowering variety a trial. If we may reason from "sport" history, several other colour variations of Molyneux may be expected in the near future. When once a variety has broken away from the type, it appears to possess a greater tendency to variation.

The very best of Mr. Jones' own seedlings is R. Hooper Pearson, a Japanese flower with slightly incurving petals; besides being richer and deeper in colour than any existing yellow variety, it has a capital habit, and will be useful to the grower of

bush specimens as well as to the exhibitor of specimen blooms. The flowers are the same colour from crown or terminal buds, and somewhat resemble in form a fine flower of Mutual Friend. It was unanimously awarded a First-class Certificate by the National Chrysanthemum Society on Monday last. Some bush plants that had been partially thinned were making a fine show; the tallest plants are not more than 4 feet high. Princess Charles of Denmark, a variety sent out by another establishment last season, is also a good yellow-flowered Japanese incurved, the colour being very rich.

We next noticed Yellow Queen of the Earlies, certificated this season; Pride of Mychett, an early-flowering Japanese variety, pink, with gold centre; Sunshine, a beautiful rich yellow-flowered, decorative variety, not so novel, but of great merit. When speaking of these, one cannot refrain from including Ryecroft Glory and its sport, two pre-eminently useful decorative varieties.

Though we all attempt to estimate the value of a variety during its first season, it is not always possible to do so correctly. It was interesting, therefore, to note that of varieties sent out last year, there are again fine specimens of Mrs. Lionel Humphrey, a pale primrose Japanese variety, with notched petals; Mr. Humphrey, a red Japanese, with buff reverse; Mrs. J. Cross, yellow Japanese; and Mr. Hugh Crawford, a Japanese bloom, with shades of chestnut and yellow.

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

OCTOBER 25.—Present: Dr. M. T. Masters (in the chair); Mr. Bennett-Poë, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Cypripedium insigne Malformed.—A flower was received from Mr. R. Keeble, of the Gardens, Twyford, Berks, remarkable for being in a very arrested state. The front sepals were nearly separate, not coherent as usual. The posterior sepal was normal, the petals were present, but no pistil, a solid column occupying the centre of the flower, with an abortive stigma at the summit.

Fruit of Diospyros kaki.—Canon Ellacombe sent some specimens "from a tree growing against a south wall, but never protected, which has been there at least a dozen years and possibly more."

Victoria Plums, Second Crops.—Both Mr. Marshall of Bexley, and Mr. Addington of Ford House, St. Neots, sent samples of ripe Plums of this variety, as second crops. Mr. Addington remarks:—"The tree off which I gathered them had an enormous crop of Plums early this year, and it has now a good quantity of a second crop." It is, of course, an unusual occurrence, but the result of the prolonged summer weather.

Lilium speciosum with *Petaloid Stamens*.—A blossom was received from Mr. E. H. Jenkins, of the Queen's Road Nursery, Hampton Hill, remarkable for the exterior (sepaline) stamens being completely changed into perianth-leaves, resembling the others in every way.

Chrysanthemums Damping Off.—Mr. Saltmarsh, of Chelmsford, sent some cut flowers of Chrysanthemums, in which the lower part of the blossom was arrested in growth from internal decay. It was the general opinion that this was due to too gross feeding and a too confined air. Flowers-of-sulphur might correct it, if the other conditions were attended to.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 27.—Present: Messrs. G. Shorland Ball (in the chair), G. W. Law-Schofield, J. Leemann, A. Warburton, H. Greenwood, J. Backhouse, W. Bolton, T. Cypher, R. Johnson, W. Stevens, and F. Mills (hon. sec.).

JOHN LEEMANN, Esq., Heaton Mersey (gr., Mr. Edge), showed *Cattleya labiata*, *Postelsiana superba* (First-class Certificate); C. I. Leemann, a very beautiful form, with pure white sepals and petals of good shape and substance, and the lip slightly marked with purplish-red (First-class Certificate); Lelio-Cattleya Henry Greenwood (Award of Merit); L.-C. Ophelia (Award of Merit); *Cattleya labiata* (Award of Merit); L.-C. Sallieri magnifica; C. Mantini inversa, *Cypripedium Arthurianum*, C. eucharis, and C. orphanum. This exhibitor also staged a very fine group of miscellaneous Orchids, for which he received a Silver-gilt Medal.

A. WARBURTON, Esq., Haslingden (gr., W. Lofthouse), showed *Cattleya labiata* R. I. Measures (First-class Certificate) and C. Missour. THOMAS STATTEN, Esq., Whitefield (gr., W. Johnson), showed *Cattleya labiata* Statteniana (Award of Merit); *Dendrobium Schroderianum albens* and Lelio-

Cattleya Minerva. Also a group of miscellaneous Orchids, for which a Silver Medal was awarded.

H. SHAW, Esq., Birch Vale (gr., Mr. Cliffe), showed *Cattleya Mantini* (Award of Merit); *Catasetum Bungeorothi*, *Lælia Dayana*, and *Cypripedium insigne*. W. DUCKWORTH, Esq., Flixton (gr., Mr. Tindale), showed *Cattleya Mantini nobilior* (Award of Merit).

Ven. Archdeacon RAWSTONE, Blackburn (gr., Mr. Hewitt), showed *Cypripedium Deedmanianum inversum*. W. CYPHER, Cheltenham, showed *Cattleya labiata superba* (Award of Merit), and staged a group of Orchids, for which a Vote of Thanks was awarded.

MR. J. ROBSON, Altrincham, showed *Cypripedium insigne* Robsoniae, C. i. pallida, and staged a group of *Cypripediums* for which a Vote of Thanks was awarded.

MESSRS. J. BACKHOUSE & SON, York, showed *Oncidium tigrinum*, a very fine variety, and a remarkably well-grown specimen (an Award of Merit and a Cultural Certificate were obtained).

EXMOUTH CHRYSANTHEMUM.

OCTOBER 27, 28.—This, the thirteenth annual exhibition, was a most successful one. We can only deal with the more prominent exhibits.

CUT BLOOMS.

In the class for thirty-six Japanese varieties, H. HAMMOND SPENCER, Esq. (gr., G. Foster), was a good 1st with fine fresh-looking blooms; the more noticeable were Mrs. Mease, Mrs. Molin Grant, Lady Byron, Souvenir de Moulin, Lady Ridgway, Australia, Werther, and Phœbus; 2nd, Rev. G. LYON (gr., J. Styles), a very close competitor. He had Madame Gustave Henry, Australian Gold, Chenon de Leché, Mrs. Mease, all very fine flowers.

For twelve Japanese, the same competitors won, their positions being as before. For twelve incurved varieties, Rev. G. LYON was 1st, having excellent examples of Globe d'Or, Baron Hirsch, and Violet Tomlin; H. HAMMOND SPENCER, Esq., was 2nd, his finest being Major Bonaffon, Topaz, Orientale, and Brookleigh Gem.

For eighteen blooms (local), R. GIBBONS, Esq., was a good 1st; and for six white varieties, R. H. CLARK was 1st; and for six blooms, any variety or colour, R. GIBBONS, Esq., was 1st with splendid flowers of Colonel B. Smith.

Circular Groups.—Here General ROCKE (gr., Mr. Pennel), 1st, had a fine collection, the flowers being of superior size, and the foliage clean; the 2nd was taken by Mrs. GRESWELL (gr., Mr. Kingscote), who likewise was successful with plants of white, yellow, bronze, and crimson varieties.

Several special prizes were offered, viz., for dinner-table decorations, confined to ladies, Miss E. URQUHART being 1st; and Mrs. BAKER, 2nd.

For a basket of Chrysanthemums, Ferns, and foliage, Mrs. HODGSON was 1st; and Miss ARTHORP, 2nd. Mrs. BAKER and Miss ARTHORP were respectively 1st and 2nd for a vase of Chrysanthemums and autumn foliage. H. HAMMOND SPENCER was 1st for nine vases of Chrysanthemum blooms, each consisting of separate colours.

MR. W. J. GODFREY, nurseryman, Exmouth, had an exhibit including plants and cut-blooms of Chrysanthemums, choice Carnations, Cannas, and Begonia Gloire de Lorraine. Mr. T. R. STREET, nurseryman, staged a quantity of cut blooms and flowering plants; Mr. MAYNE, Bicton, flowering plants, including a number of Salvias, Orchids, Primulas, Cyclamens, and foliage plants.

FRUIT.

MR. MAYNE showed numerous Apples and Pears, fine bunches of Lady Downe's and Black Alicante Grapes, Sutton's Scarlet Melon, Queen Pines, &c. A considerable quantity of fruit was shown, many of the Pears being of an unusually large size. Grapes were good, the three bunches of Black Alicante, shown by Rev. H. CLARK, especially so, berries large and of fine colour.

Among the prize-winners for Apples, the Rev. H. CLARK was often in evidence; J. GORDON, Esq., R. LAY, Esq., Mrs. STEVENSON, and Miss PINCKNEY were also very successful exhibitors. Among exhibitors of Pears, General ROCKE, A. F. TERRELL SHARPLAND, Esq., Mrs. GRESWELL, and Dr. HODGSON won 1st prizes.

NATIONAL CHRYSANTHEMUM.

OCTOBER 31.—The Floral Committee of this Society met at the Royal Aquarium, and the meeting was an interesting one on account of the many new varieties shown.

First-class Certificates were awarded to (incurved) John Miles, from Mr. N. MOLYNEUX, gr., Rooksbury, Fareham; the upper surface colour pale chestnut, the reverse bronzy-buff, a flower of good substance and shape, and fine quality. The same exhibitor showed (Japanese) James Molyneux, a flower of ivory-white, with long drooping florets, a variety which found favour with some members of the Committee, but a proposal to award a Certificate of Merit was lost; (Japanese) Sir Herbert Kitchener, a yellow flower, suffused with pale orange-red, with drooping florets—attractive, yet in its form as shown scarcely worthy the award. From Mr. HENRY WEEKS, gr., Thrumpton Hall, Derby, came some very fine varieties, four of which secured First-class Certificates, viz., Emily Towers, deep pink with a silvery reverse, and broad florets—a variety with nice colour and drooping florets, that incurve somewhat; Lady Crawshaw, white, with a slight purple base, and lightly striped with this colour on some of the florets; Mrs. COMBES, pink, pleasing in tint, with a silvery reverse to the florets—drooping florets, and full, large flowers; and Henry Weeks,

a striking variety of an orange-crimson colour with an amber and silvery reverse, rich in colour and showy. The same award was made to Mrs. W. Mease, from Mr. W. GODFREY, Exmouth, one of the yellow sports from Madame Carnot, in this case pale canary-yellow, having all the good qualities of the variety from which it sported. The choicest of the new varieties was R. Hooper Pearson, a magnificent deep golden-yellow Japanese, from Mr. H. J. JONES, Ryecroft Nursery, Lewisham, a real acquisition to the yellow varieties, deep-gold in colour, with broad drooping florets; the flowers large, full, and in every way first-rate. The same Award was made to a very attractive decorative variety, named Ryecroft Scarlet, a plant of which was staged, showing it to be a good grower, and free bloomer; colour bright orange-scarlet, and very attractive. Similar Awards were made to Mrs. White Popham (W. Wells), a large Japanese, of a bright lilac-purple colour, with a silvery reverse to the broad florets, a large incurving flower of fine properties; to Japanese Nellie Pockett (W. Wells), a full white flower, with curling florets of good shape; and to decorative Chrysanthemum Mychett Beauty (W. Wells), a plant being shown from the open ground; the flowers are of a bright golden hue.

Other varieties of a promising character were Fred Joy (Seward), bright orange-chestnut, with an amber reverse, striking and effective; Chatsworth (Cannell & Sons), light ground, with pale purple stripes, large drooping florets; Purple Emperor (Cannell & Sons), rich amaranth-crimson, with a silvery reverse, very striking in colour; Japanese Jean Bloomfield (C. Gibson), deep yellow, of good colour, but not sufficiently developed; W. Carsham (H. Weeks), reddish-chestnut, with buff reverse, large and full, but lacking finish; and Grand Dragon (W. Wells), a striking deep yellow flower, of decided promise. There is, therefore, no lack of novelties, and the present season appears to be as rich in new flowers as any which has preceded it.

EASTBOURNE HORTICULTURAL.

NOVEMBER 1.—No place can be more appropriate for a Chrysanthemum show than the spacious Floral Hall which forms a part of the Devonshire Park, and affords ample space for numerous exhibits, and for the public to inspect them. After such an unusual season, it was a little early to hold the show; still, there was a good all-round display, the incurved varieties being the weakest feature, as more time is required by these. The weather was fine, and a large company came to the show.

CUT FLOWERS.

The 1st prize for twenty-four Japanese varieties came from Mr. J. STREDWICK, Silverhill, St. Leonards, whose leading blooms were Graphic, Eva Knowles, Edith Tabor, Pride of Madford, C. Davis, Madame G. Henry, Australian Gold, and President Nonin; he was the only exhibitor. With twelve blooms Mr. STREDWICK was again 1st; and Mr. J. Harwood, gr. to A. J. JACK, Esq., Seaford, was 2nd. The latter exhibit was 1st with six blooms of one white variety, namely, Simplicity. The best six of any other colour also came from Mr. Harwood, viz., Oceana, in fine character; Mr. A. Emery, gr. to H. OAKLEY, Esq., Eastbourne, was 2nd, with finely-coloured Edwin Molyneux; the incurved varieties were poorly developed.

The competition of six blooms in a vase, arranged with foliage, made a nice feature, Mr. STREDWICK taking the 1st prize with fine blooms set up with autumn foliage; Mr. Camm, gr. to Her Grace the Duchess of CLEVELAND, Battle Abbey, was 2nd, with six fine blooms of a yellow variety.

In the next division, the best twelve Japanese varieties came from Mr. E. East, gr. to Mrs. RAY, Meads; Mr. W. Jupp, gr. to G. BOULTON, Esq., Eastbourne, was 2nd. Mr. A. EMERY had the best eighteen, Mr. W. JUPP taking the 2nd prize.

Mr. A. EMERY had the best six incurveds in Baron Hirsch, Mr. F. Minstral, and Madame Darier, &c.

AMATEURS' DIVISION.

In this section Mr. F. WILLIAMS, Eastbourne, had the best twelve Japanese varieties—a very creditable lot. Mr. W. SOUTHAM, Eastbourne, had the best six. Mr. HIBBERT had the best six incurved varieties. Some good vases were also staged in this division.

The best group of Chrysanthemums in the open division came from Mr. W. JUPP, well-grown and finely-bloomed plants, effectively arranged; Mr. J. GORE, Polegate, was 2nd. The latter had the best group of mixed plants, flowering and foliage, inclusive of Orchids, Carnations, Begonia Gloire de Lorraine, &c.; Mr. W. JUPP, who was 2nd, depended mainly upon bright-coloured Crotons.

In the amateurs' division, Mr. F. WILLIAMS set up a very fine group for an amateur, the plants being well grown and grandly bloomed.

In another division, Mr. Pattenden, gr. to Miss WILSON, Eastbourne, was 1st, with a group of Chrysanthemums and other plants.

MISCELLANEOUS.

Grapes, Apples, and Pears were shown, the two last-named somewhat extensively. The best three bunches of black Grapes were finely-finished Alicante from Mr. CAMM, Battle Abbey; Mr. J. GORE, Polegate, was 2nd, with good Gros Colmar, which, however, lacked colour.

Mr. CAMM took the 1st prize with three splendidly-finished bunches of white Muscat of Alexandria.

The best six dishes of culinary Apples came from Mr. F. W. THOMAS, Fruit Gardens, Polegate.

Mr. CAMM had the three best dishes of baking Pears, the varieties, Beurré Bachelier, Catillac, and Passe Colmar. 2nd, Mr. THOMAS, with Vicar of Winkfield, and Uvedale's St. Germain, differing from the foregoing.

In other divisions, very good Apples, Pears, and Tomatoes were shown.

Messrs. SUTTON & SONS, and others, offered prizes for Vegetables, and these were well represented.

From Mr. May, gr. to His Grace the Duke of DEVONSHIRE, Compton Place, came a fine group of Chrysanthemums backed with Palms, and a fine Araucaria excelsa, which was highly commended; and Mr. G. F. SCOTT, nurseryman, Eastbourne, filled the front of the spacious platform with a very imposing display, having on each side large groups of Chrysanthemums fronted by flowering and foliaged plants, and in the centre, bunches of superb Cactus-Dahlias for the season of the year, backed by flowering and foliaged plants, and fronted with small Ferns, also highly commended.

Messrs. DURRANT, YOUNG & CO., nurserymen, Eastbourne, set up at the west end of the Hall a fine group of Palms, Chrysanthemums, &c., a prominent feature in the arrangements; and Mr. F. G. MILLER, florist, Eastbourne, also had a group.

From Mr. WELLS, Earlswood, Redhill, came a collection of new varieties of Japanese, and Certificates of Merit were awarded to Mrs. White Popham, President Bevan, Crimson Pride, and Mychett Yellows. Mr. WELLS also had some fine bunches of the newer market and decorative varieties.

KINGSTON CHRYSANTHEMUM.

NOVEMBER 1, 2.—The Kingston and Surbiton Chrysanthemum Society has this season held its twenty-second annual exhibition on an earlier date than during its history. There are many who think that a better show would have resulted had the fixture been ten days later. The display opened on Tuesday last was a good one, but hardly satisfactory to the once celebrated and flourishing society in Kingston.

There were some capital blooms shown, but not so much competition as could have been wished. The Champion Challenge Vase, having now been won twice by the same exhibitor, it has become his property. It was a subject of frequent remark, that Mr. MORTIMER showed such a collection of Dahlia blooms from the open that has probably never been equalled upon the same date.

PLANTS.

There were three exhibits of a miscellaneous group of plants, to contain not fewer than twenty-five distinct varieties of Chrysanthemums. The 1st and 2nd prize groups were placed upon the floor, back to back. The 1st prize exhibit was from Mr. J. LOCK, gr. to E. S. EADY, Esq., Oatlands Lodge, Weybridge. In this group was imitated the pond of water and cork bridge arrangement, but in a miniature manner. Such a system is more suitable to an exhibit upon a larger space. Mr. J. Hoskins, gr. to D. SALAMON, Esq., St. James' Road, Kingston Hill, had a group containing better Chrysanthemums and other plants, and, in our opinion, should have been placed 1st.

The 1st prize for four plants of Japanese varieties was won by Mr. W. BRETT; he had W. H. Lincoln, Viviani Morel, Souvenir d'une Petite Amie, and Col. W. B. Smith. Mr. S. PEAD was 2nd.

The best six table plants were shown by Mr. T. H. Bolton, gr. to Mrs. BLACKER, Coombe End, Kingston Hill, his Codæums Golden Ring and elegantissima, and Aralia elegantissima being the prettiest plants. There were also some pretty exhibits of Solanums and other berried plants, and of single and double-flowered Chinese Primulas.

CUT BLOOMS.

The large class for incurveds was won by Mr. F. KING with a collection rather less good than those of the same section in his "Champion Vase" exhibit.

The best twelve blooms of incurved varieties were from Mr. CARYER, gr. to A. G. MEISSNER, Esq., Aldenholme, Weybridge.

The best six incurved blooms of one variety were of Duchess of Fife, white, from Mr. F. KING.

The best collection of twenty-four Japanese blooms, distinct, was from Mr. J. F. McLeod, gr. to J. P. MORGAN, Esq., Dover House, Roehampton. He had capital blooms of Pride of Madford, Lady Ridgway, Madame M. Ricoud, Madame G. Henri, Mons. Pankoucke, Oceana, Lady Byron, Reine d'Angleterre, the new Chatsworth, Phœbus, Madame Ph. Revoire, Edith Tabor, Col. W. B. Smith, Mr. Probyn, Lady Oporto Tai, a good yellow Japanese, sent out by Mr. Cannell, &c. The 2nd prize was won by Mr. F. KING, gr. to A. F. PERKINS, Esq., Oak Dene, Holmwood, Surrey, who was 1st for the Challenge Vase.

The quality in the class for twelve Japanese blooms was not so good. The 1st prize was won by Mr. S. PEAD, gr. to R. S. BOND, Esq., Croylands, Surbiton.

The best blooms in the class for six of any Japanese variety were of Mlle. Thérèse Rey, from Mr. F. KING.

A collection of twelve nice reflexed blooms won 1st prize in this section for Mr. T. CARYER. There was only one collection of twelve Anemone blooms; this was from Mr. G. W. FORBES, gr. to Mme. NICOLLS, Regent House, Surbiton.

The best collection of twelve bunches of Pompons was one from Mr. T. CARYER, who showed a very nice lot; but the other three exhibits in the class were weak.

Single-flowered varieties were capital from Mr. G. W. FORBES, who had a collection of twelve bunches fit for any show, National or otherwise. Anemone Pompons were poor.

Mr. G. W. FORBES was 1st in the class for locally-produced incurveds to the number of twelve, Baron Hirsch and C. H. Curtis being his best blooms.

The class for six incurveds (local) was well won by Mr. Brett, gr. to N. M. CAMPBELL, Esq., Coombe Ridge, Kingston Hill.

There were three exhibits in the class for twelve Japanese blooms, distinct (local); and a collection from Mr. G. W. FORBES was most meritorious. The blooms of Phœbus, Lady Byron, Madame Carnot, and Reine d'Angleterre were best; Mr. C. Smith, gr. to WILSON ADDISON, Esq., Norbiton Place, Kingston Hill, was 2nd.

There were classes also for amateurs and cottagers.

SPECIAL PRIZES.

The principal centre of interest at the Kingston show is occasioned by the Champion Challenge Vase class. This is offered for the best collection of forty-eight Chrysanthemum blooms, distinct, twenty-four Japanese and twenty-four incurved. There were several competitors for this honour, but the 1st prize was worthily won by A. F. PERKINS, Esq., Oak Dene, Holmwood, Surrey (gr., Mr. F. King). The Challenge Vase having been won by this exhibitor upon a previous occasion, it has now become his property. Among the Japanese blooms the following were interesting, either from the excellent condition in which they were staged, or from their novelty:—John Seaward, Ed. Molyneux, International, Chas. Davis, Australie, Phœbus; Mrs. Mease, the Primrose sport from Madame Carnot; G. J. Warren, the yellow sport from Madame Carnot; Lady Northcote, a pure white Japanese; Lady Hanham, and C. B. Haywood, a ball-like white Japanese. The incurveds were better than might have been expected until next week. The following were very good: Mrs. N. Molyneux, Miss M. A. Haggas, yellow; C. H. Curtis, yellow; Lady Isabel, Ernest Cannell, Jeanne d'Arc, D. B. Crane, and M. P. Martignac. The 2nd prize was won by PANTIA RALLI, Esq., Ashstead Park, Epsom (gr., Mr. G. J. Hunt), who staged excellent Japanese blooms, but failed somewhat in the incurveds, some of the blooms being hardly "made up." Of his Japanese, Ella Curtis, Graphic, Australie, Edith Tabor, Madame M. Ricoud, and Edwin Molyneux, may be mentioned; and of his incurveds, Duchess of Fife, Globe d'Or, and Empress of India. The third prize was won by WILSON ADDISON, Esq., Norbiton Place, Kingston Hill (gr., Mr. C. Smith); and the 4th by C. S. EADY, Esq., Oatlands Lodge, Weybridge (gr., Mr. J. Lock).

The best exhibit for the Mayor's prize offered for a basket of cut Japanese Chrysanthemums was won by Mr. S. PEAD. The handle of the basket was covered with Myrsophyllum asparagoides, and the blooms which were cut with long stems, were placed over a covering of Azalea mollis foliage, and other plants.

The best collection of six white Japanese blooms of one variety, was one of Madame Gustave Henry, from Mr. G. W. FORBES; and the best six yellow Japanese blooms were of Phœbus from Mr. W. BRETT.

There were some pretty bouquets, buttonholes, and other decorative arrangements of Chrysanthemum blooms.

FRUIT.

The best three bunches of White Grapes were fine ones of Muscat of Alexandria, shown by Mr. Wm. Taylor, gr. to C. BAYER, Esq., Tewkesbury Lodge, Forest Hill; and the best three bunches of Black Grapes were Gros Colmar, from Mr. A. Sadler, gr. to Mrs. TULK, Cowley House, Chertsey.

The best collection of four dishes of dessert fruits was also from Mr. W. Taylor. He had Figs, Apples, Pears, and Muscat Grapes.

Mr. J. LOCK had the best collection of six dishes of Apples, three culinary and three dessert; and the best exhibit of four dishes of Pears was from Mr. A. H. Rickwood, gr. to the Dowager Lady FREAKER, Fulwell Park, Twickenham, with the varieties Lucchesse d'Angoulême, Beurré Superfin, Durondeau, and Pitmaston Duchess.

NON-COMPETITIVE EXHIBITS.

Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham, staged about sixty blooms of Japanese varieties. Prominent amongst these were some recently-certificated sorts, including the pretty primrose coloured Mrs. W. Mease, and the new yellow Japanese, R. Hooper Pearson, richer in point of colour than any yellow one yet raised.

Mr. W. WELLS, of the Earlswood Nurseries, Redhill, had a fine display of the early-flowering Japanese varieties, including Mychett Beauty, certificated the day previously. Also a collection of forty blooms of exhibition varieties, including Mrs. White Popham, and many other novelties of merit.

An extraordinary exhibit of Dahlia blooms was made by Mr. S. MORTIMER, Rowledge Nurseries, Farnham. Although it was November 1, there were shown 120 show-blooms, and thirty-two bunches of Cactus varieties. The colours and freshness of these blooms were astonishing.

Mr. W. HAYWARD, Floral Depot, Fife Road, Kingston, filled a table with Chrysanthemum plants and flowers, and flowers of other species of plants.

There were several large exhibits of fruit. Mr. J. W. MILLER, gr. to Lord FOLEY, Ruxley Lodge, Claygate, had about forty dishes of Apples and Pears, and a few Grapes. Messrs. GEO. BUNYARD & CO., Maidstone, showed sixty dishes of Apples. Mr. W. TAYLER, Osborn Nursery, Hampton, had a collection of Apples, and some Reine Olga Grapes, gathered from out-of-doors. Messrs. J. CHEAL & SONS, Crawley, had seventy dishes of Apples and Pears.

HORNSEY CHRYSANTHEMUM.

THE ninth annual exhibition of the Hornsey and District Chrysanthemum Society was opened on Tuesday at the Hornsey National Hall by the president, Mr. EDWARD W. NICHOLLS.

The past dry season has been severely felt in this suburb, and the cottagers' classes were not so well represented as formerly; the annual exhibits from the Priory, the residence of the late Mr. Alderman H. R. Williams, too, were greatly missed, but with these exceptions the show was up to the standard of previous years. The cut blooms were some of them very fine indeed, and if fault were to be found it would be that there was not sufficient variety. Incurred and Pompons were poorly represented, and there was not a single hirsute variety in the show, while Phœbuses were as thick as Blackberries. A feature of the show were the table decorations, some "not for competition," and of these last Mrs. W. H. REYNOLDS was awarded a Silver Medal, a similar Medal being awarded to Mr. A. MCGREGOR, of Hornsey, for a large stand of Palms, Ferns, and foliage plants, set with Chrysanthemums.

The Three Guinea Silver Cup, given by Mr. H. Burt, M.C.C., was won outright by Mr. W. AUSTIN, of Eastfield Road, Hornsey, and the Eight Guinea Silver Cup, given by Mr. Newenham Grayton, Editor of the *Times of Africa*, was won a first time by Mr. F. J. MATHEWS, of Barrington Road, Crouch End. The first-named is a "cottager," and the latter an "amateur," the one showing eighteen, and the other twenty-four carefully-grown Japanese blooms.

Mr. W. Ward, gr. to Mr. H. T. EVE, Q.C., carried off the 1st prize for groups in the gardeners' class, and Mr. DURRANT in the amateurs' class, and both were also awarded the Certificate of Merit of the National Chrysanthemum Society.

Among other successful exhibitors were Mr. T. L. Turk, gr. to Mr. BONEY, of Southwood House, Highgate, eight 1sts and three 2nds; Mr. A. F. BOUGARD, of Corrie Glynn, Highgate, five 1sts and two 2nds; Mr. G. Saunders, gr. to Mr. HAYES, of Highgate, three 1sts, five 2nds, and one 3rd; Mr. J. NEWMAN, of Myddleton Road, Hornsey, five 1sts, four 2nds, and one 3rd; and Mr. DURRANT, of Gordon Road, Hornsey, three 1sts, four 2nds, two 3rds, and one extra. Sir MARCUS SAMUEL, of The Mote, Maidstone, kindly set up, not for competition, a very choice selection of fruit.

SOUTHAMPTON HORTICULTURAL.

NOVEMBER 1, 2.—The annual autumn show of the Royal Horticultural Society of Southampton was held in the Victoria Hall, and was a success in every way. The hall is commodious, light, and of good approach. The secretarial duties, in the capable hands of Mr. Fudge, were carried out in a thorough manner.

Cut blooms were numerous, and of average quality. The principal class was for twenty-four Japanese blooms. The premier award fell to Mr. W. H. MOSE, Belmont Nursery, Sholing, for a stand of even-sized, fresh, well-built flowers. Especially good were Phœbus, N. C. S. Jubilee, Edwin Molyneux, Pride of Madford, Emily Silsbury, and Duke of Wellington; Mr. J. Bowerman, gr. to Mrs. HOARE, Hackwood Park, Basingstoke, was a good 2nd. Mr. NOBBS, gr. to Her Majesty the QUEEN, Osborne, Isle of Wight, who was 3rd, had a creditable stand.

Mr. BOWERMAN was 1st for eighteen Japanese blooms, staging flowers of good quality; Mr. NOBBS taking a similar place for twelve Japanese blooms.

Mr. Goss, gr. to W. G. TWIG, Esq., Byams, Marchwood, was 1st for twelve blooms in eight varieties.

Incurred varieties were very poor. Amateurs staged blooms equal to those in the open classes. Mr. H. H. LEES, Cedar Road, The Avenue, 1st for twelve and six varieties, closely followed by Mr. E. BROWN, Jun., Hill Lane.

PLANTS.

Groups of Chrysanthemums were well represented. The plants were exceptionally dwarf, and well arranged. The large blooms with which they were furnished showed to the best advantage by the sensible manner in which they were disposed, each plant being given plenty of space. Mr. BAIN, gr. to Mrs. DICKSON, Shirley, was easily 1st in the open class; Mr. E. BROWN occupying a similar position in the amateurs division.

In the Chrysanthemum and foliage plant group class there were no fewer than five competitors, and they made an attractive display down the body of the hall. Mr. JAMES, gr. to the Hon. Mrs. ELLIOTT YORKE, Netley, easily secured the leading award, and was followed by Mr. T. HALL, gr. to Sir S. MONTAGUE, Bart., South Stoneham House, Southampton.

FRUITS, &c.

Fruit and vegetables were well represented. Grapes especially being good. Mr. W. MITCHELL, gr. to J. WILLIS FLEMING, Esq., Chilworth Manor, secured several leading prizes with excellent examples.

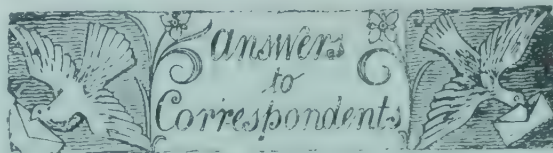
Non-competing exhibits were numerous and noteworthy, especially the collection of Apples from Messrs. E. HILLIER & SONS, Winchester; shrubs from Mr. W. H. ROGERS, Red Lodge Nurseries; the floral decorations from Mr. E. H. BAILEY; and the collection of hardy herbaceous cut-flowers from Mr. B. LADRAMS, Shirley.

CATALOGUES RECEIVED.

BEN REID & Co., Aberdeen, N.B.—Forest Trees and Roses.

T. SMITH, Daisy Hill Nursery, Newry—Border Carnations, Pinks, Early-flowering Chrysanthemums, Phloxes, Lobelias, Pansies, Violas, Auriculas, Violets, &c.

JAMES BACKHOUSE & SON, Ltd., York—Trees, Shrubs, Conifers, &c.



BOTANIC GARDENS: K. See *Kew Bulletin*, Appendix iii, 1897. *Hogg's Year Book*, *The Garden Annual*, &c.

CHRYSANTHEMUM LEAVES: H. D. Affected with rust. See our recent numbers, where the fungus is figured and the remedies given.

CREEPERS FOR A HIGH WALL IN A BLEAK SITUATION: A. G. B. Ivies being excluded, you should plant *Cotoneaster microphylla*, *C. Simonsii, *Garrya elliptica, *Prairie, *Ayrshire, *and Turner's Crimson Rambler Roses, *Crataegus pyracantha*, **Pittosporum Tobira*, **Ampelopsis Veitchii*, A. purpurea, *Aristolochia Siphon*, *Clematis montana*, and any of the garden hybrids, *Jasminum nudiflorum*, *J. revolutum, **Lonicera brachypoda*, L. b. aureo reticulata, L. sempervirens, *Menispermum canadense*. Those with an asterisk being of comparatively low growth, should be employed to clothe the lower part of the wall.

EUCHARIS: W. J. P. A fusion of two flowers is not uncommon in this, or indeed in any flower.

FUNGUS? ON BEECH: F. B. The white excrescence is not a fungus, but an insect allied to the mealy-bug. It is very common on the Beech, and very difficult, if not impossible, to get rid of. If the tree is a small one, you might try spraying with a wine-glassful of kerosine stirred up in a gallon of soap suds. Keep the mixture well stirred.

HORTICULTURAL INSTRUCTION: S. P., and Others. We have communicated with the advertiser, but have received no reply.

LINNEAN SOCIETY: Amicus. Why not have written to the secretary? There is no entrance examination, but you must have some interest in natural history, and be recommended as a fit person by three Fellows, and you will then be balloted for at a meeting of the Fellows. Of course, it is a *sine qua non* that you pay your entrance-fee and annual subscription.

MAMMILARIA PICTA: A. J. W. The plant does well firmly potted in rich loam, mixed with an equal bulk of sandstone and mortar-rubble, and stood on a sunny shelf in a hothouse; affording it water in moderation from March to October, and little, if any, the remainder of the year. Provided the drainage is made good annually, the plant will not require repotting oftener than once in three years.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—Pickering. 3, Ecklinville; 5, Dutch Mignonne; 6, Cox's Pomona; 7, Gravenstein; 8, Yorkshire Beauty; 9, Cellini.—S. G. 1, Mère de Ménage; 2, Lord Grosvenor; 3, Emperor Alexander; 6, Dumelow's Seedling; 7, Blenheim Orange Pippin.—S. E. A., Yorks. 1, Minshall Crab; 2, not known, resembles Beauty of Kent; 3, Court Pendu Plat; 4, Cockpit; 5, Dutch Mignonne.—G. W. 1, Cox's Orange Pippin; 2, Blenheim Orange ditto; 3, worthless; 5, Emperor Alexander; 6, Scarlet Nonpareil.—J. Pitts. 1, Baronne de Mello; 5, Beurré Superfin; 6, Beurré Rance; 9, Brown Beurré; 6, General Todtleben; 23, Marie Louise d'Uccle; 18, Beurré d'Anjou.—Thos. Baxendale. 1, Blenheim Orange Pippin; 2, King of the Pippins; 3, Fearn's Pippin; 4, Warner's King; Pear, Beurré Bosc.—H. Joy. 1, Cox's Orange Pippin; 2, King of the Pippins; 3, Fearn's Pippin; 4, not known, worthless; 5, Yorkshire Beauty. Pear, Thomson's.—D. T. F. 1, Gansell's Bergamot; 2, Beurré Diel; 4, Easter Beurré; 5, Beurré Clairgeau; 6, Souvenir du Congrès.—E. Lazenby. 1, Aromatic Russet; 2, Duke of Devonshire; 3, Brownlee's Russet.—

Foreman. Apples: 1, Warner's King; 2, Maltster; 4, Hoary Morning; 6, Nonsuch; Pears: 1, Catillac; 2, Beurré Bachelier; others decayed.—H. K. Apple, King of the Pippins.—J. O. B. Braddick's Nonpareil.—E. J. Woodward. Apples: 1 and 2, Reinette du Canada; 3, Northern Greening; 4, Hollandbury; 5, New Hawthornden; 6, Tower of Glamis; 7, Cellini.—T. W. Swinburne. The Apple you send under the name of Enderleaf is very similar to Gloria Mundi—a large and very handsome variety. A variety under this name was exhibited at the Apple Congress at Chiswick in 1883.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—A. M. 1, Cornus (Benthania) fragifera; 2, Taxodium distichum.—H. V. 1, A variety of Cupressus Lawsoniana; 2, Elæagnus pungens var. aurea; 3, Euonymus radicans, variegated form; 4, Cotoneaster Simonsii; 5, Escallonia, probably E. rubra.—M. F. Your plant is Ecobolium Elaterium, which furnishes the drug called Elaterium. It is violently poisonous, so that it should not be allowed to remain where cattle can get access to it. The common name is the Squirting Cucumber.—J. A., Antrim. 1, Juniperus recurva; 2, Juniperus virginiana var.; 3, Cupressus Lawsoniana var.; 4, Cupressus nootkatensis, golden var., alias Thuiopsis borealis; 5, Calycanthus occidentalis.—W. S., Brentford. 1, Lomaria gibba; 2, Plumbago rosea; 3, Cypripedium barbatum; 4, Croton, cannot name from specimen sent; 5, Oplismenus Burmani variegatus; 6, Dracæna Baptisti.—R. Y. 1, Aspidium (Cyrtomium) Fortunei; 2, Polystichum pungens; 3, Selaginella stolonifera; 4, Aspidium (Cyrtomium) falcatum; 5, Doodia caudata; 6, Davallia Nova Zealandia; 7, Pteris adiantoides; 8, Nephrodium molle; 9, Asparagus Sprengeri; 10, Selaginella Mertensii; 11, Adiantum hispidulum; 12, Selaginella casia; 13, Pteris longifolia; 14, Pteris tripartita.—R. McO. 1, Not recognised; 2, Common Thyme; 3, Phlox setacea, probably; send when in flower; 4, perhaps Aubrietia deltoidea; 5, Not recognised; 6, Acer monspessulanum. It is impossible to name such scraps satisfactorily.

NARCISSUS POETICUS: H. A. M. For early flowering this late variety is not exactly suited, and if it is so employed, the bulbs should have been potted in August or early in September.

POTATOS: J. P. A. Supertuberation. Perhaps the hot, dry summer has something to do with it.

PELARGONIUM: E. You are quite right, there are a very few species in other regions than the South African. From the point of view of geographical botany, the distribution is very interesting.

ROMAN HYACINTHS: H. A. N. These bulbs, like others, cannot be forced into blossom before they have made a good number of roots, and to enable them to be forced early the boxing or potting of the bulbs should be done early in September. If the boxing, &c., be not carried out before the present date it is not possible to have blossoms under two months.

COMMUNICATIONS RECEIVED.—C. Mathews.—E. J. L.—W. W.—Henry Brownhill.—H. H. T., Kew.—G. M.—J. B.—D. I.—E. J. L.—J. H. V.—W. E. G.—J. H. D.—W.—D. T. F.—D. J.—W. J. B.—M. Leitchin.—J. H. D.—D. R. W.—S. A. W.—G. B.—D. K.—E. C.—W. Angus.—E. S.—A. D.—H. H. T.—C. H.—A. P.—C. J. W.—Wild Rose.—T. B.—C. T. D.—G. W.—R. L.—E. J. L.—J. Lazenby.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—H. G.—C. W. D.—Editor of *Indian Gardening*.

DIED.—On the 30th ult., very suddenly, at his residence, 31, The Grove, Boltons, Mr. LATIMER CLARK, F.R.S., F.R.A.S., M.I.C.E., M.I.E.E., &c., in his seventy-sixth year. Mr. Clark was a cultivator of alpine plants, and took much interest in them.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly. Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see p. x.)



THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 12, 1898.

THE PUKA-TREE AND ITS HOME.

THERE is a small group of islands off the New Zealand coast, known as Moro-Tiri, or Chicken Islands, seven in number; but only four of them are worth mentioning. The islands being out of the track of ships, and the landing bad, they are seldom visited, except by Maori fishermen, who go there to collect Ti-Ti, or Mutton-birds. On the largest of the islands there is a large fortified Maori Pa, probably made about 100 years ago or more; the remains are still to be seen cut out of the sandstone, and naturally protected on two sides by steep cliffs, on the others by narrow spurs with ditches cut across them. In the centre is a large square, where the natives used to camp, and now covered with old pepe-shells (a sort of cockle), brought there for food from the main land. Unfortunately, there are no traditions among the present natives on the mainland as to who occupied this Pa, or anything about the place. That it was occupied by a warlike people, who were afraid of being eaten, is evident from the trouble taken to protect it from surprise. This island is between 300 and 400 acres in extent; on the north it is exposed to the full force of the ocean, its wind-swept cliffs being about 300 feet high.

The bush on the various islands consists of Kohe-Kohe tree and scrub Manuka, Pohutukawa, Puriri, Karaka, &c., all pretty, ornamental trees, that would grow well in the West of England. But what makes the islands so interesting from a botanical point of view is, that it is the home of what has been described as "one of the rarest trees in the world"—the *Meryta Sinclairi*, or "Puka" of the Maori. It is a fine ornamental tree, with large leaves; but here, in its native habitat, does not show to advantage, on account of being surrounded by other trees. It grows to about 30 feet, and is very conspicuous above the other foliage, the large leaves glistening in the sun when looking down the gullies in which it grows. It seems as if nature had adapted the tree to its windy surroundings, as the leaf has not only the usual mid-rib, but also a "rib" right round the edge of the leaf to give it stability, and prevent it being split by the wind. Most of the trees are of the male variety, the female having seed nearly ripe in September, the time of my visit. There were very few young plants about, one reason being that the seed falls and rots in the dark dense bush below, another that the pigeons with which the islands abound, eat a lot of the seed before it is ripe. When broken the branches exude a sort of gum.

Another pretty shrub growing there that would do well in the mild west country climate at home, is the "Whau" or cork-wood of the settler, called so on account of its extreme lightness, and used by the natives for floats for

their fishing nets; it has bunches of pretty white flowers, which change to a black spiky burr as a seed-case. Captain Cook's Scurvy-grass also grows here. On the top of the islands were masses of the large white *Clematis indivisa*, with its white star-like flowers, hanging in long festoons from the various bushes, and pretty green Parrakeets (*Kakariki*) flying round about with no sense of fear. Beneath are masses of delicate Maidenhair Fern, with the new spring fronds sprouting through the heaps of last year's dead vegetation.

Numerous holes in the soft vegetable mould are the homes of the Ti-Ti or Mutton-bird, a kind of Petrel, which lays its eggs, and hatches its young in company with a large lizard called the Tuatara. The young birds become very fat, and are highly prized by the Maoris for food. They generally preserve the birds in their own fat, in bags made of split Kelp, a sea-weed growing round the coast, or in calabashes made for the purpose. To Europeans they taste nasty when fresh, but when preserved by the natives they are simply "beastly." Penguins abound round the islands, and are fond of going ashore and feeding on a species of *Mesembryanthemum*, which contains a good deal of salt in its leaves. The birds make paths up the steep cliffs, it is a long climb for them; but the descent is easy, as they sit tight on the ground, spread out their stiff, rudder-like tails, and slide. If they strike a stone or anything, over they go, with their little white breasts up and legs kicking in the air, but they soon right themselves, and start seaward again.

There is a very rare lizard on the island called the Tuatara, to which I have before referred, and which averages 15 to 18 inches in length; it lives in holes with the Mutton-bird. I should say it is the lizard, from the length of their claws, that dig the holes, and the birds take possession of these holes in the nesting season. These lizards are the representatives of one of the oldest types of reptiles (and they look it), and are only found on the outlying islands on the New Zealand coast. This month and the next they lay their eggs, which it is said take thirteen months to hatch. The eggs are small and white, with a soft shell, like a turtle's egg. The only way to distinguish the male from the female is by the male having a spiky fringe right down the head and back; the female has it, but not so marked. They have very large mouths, with teeth; they bite, but are not poisonous. If kept in captivity in a garden and fed with chopped meat, they become, in a measure, tame.

One or two of the islands are mineral bearing, and good indications of copper are found on the most eastern island of the group. The fact of these islands being the home of one of the rarest trees, and also of an almost extinct lizard, alone makes them interesting. In past ages no doubt they were a portion of the mainland, but now they stand alone, the mainland showing in the far distance. Rare plants, birds and insects, how long will they remain undisturbed? Already the sound of rock-blasting echoes through the hills, frightening countless sea-birds. Bush-fires caused by mining, bird and plant collectors, will soon destroy what has been in existence for thousands of years. The bush burnt, the soil soon disappears, swept into the sea by wind and rain; so in time what was once a pretty wooded islet, will have nothing left but bare rocks and a few tussocks. *Hugh Boscawen, September 2, 1898.* [The *Meryta* is an *Araliad*, figured and described in *Kirk's Forest Flora of New Zealand*. We shall refer to it again shortly. ED.]

ORCHID NOTES AND GLEANINGS.

TRICHOPILIA LEHMANNI, Regel.

THIS handsome and highly fragrant species, figured in the *Gartenflora*, 1888, t. 1276, is usually considered to be a form of *T. fragrans*, although it is a well-marked variation, a notable feature being the length of the ovary, which in *T. Lehmanni* ranges between 2 and 3 inches, thus giving the several-flowered inflorescence a more lax appearance than is observable in those of *T. fragrans*. The petals are also proportionately longer and more wavy, and the lip more distinctly divided. Good examples of it, of pure white colour, are sent by F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin. The odour, which resembles the Tuberose, is most powerful and penetrating. It was collected by Consul F. C. Lehmann in the Western Cordilleras of Colombia.

ODONTOGLOSSUM MACULATUM VAR.

A very singular variation of this species, which may be a reversion from *O. × aspersum* (*maculatum × Rossii*), is sent by H. Brittan Evans, Esq., Pembroke Road, Clifton. In general appearance it is an *O. maculatum*, although the sepals are longer and slenderer at the tips than ordinary forms. The colour of the flowers is primrose-yellow, with a greenish tinge on the sepals and petals, on the former of which the usual brown markings of the ordinary varieties are replaced by a greenish-cinnamon line, the petals having a few similar markings at their base; on the labellum the markings are wanting, except one small spot on one flower, and two on the other; the blade of the lip is of canary-yellow colour. The ordinary form would be considered the more handsome by most people, but this is very curious and attractive.

THE BULB GARDEN.

HYMENOCALLIS SPECIOSA.

I HAVE a plant of this species now carrying a particularly fine head measuring 1½ foot across, with a dozen sub-erect flowers. The flowers are 8 inches long and 9 inches across, very fragrant (especially at night), pure white in colour, with the narrow segments, membranous, funnel-shaped, staminal cup, and prominent light green filaments and style characteristic of the genus. As a decorative plant, it is very effective, as all the flowers are open at the same time. Although one of the oldest species of *Hymenocallis* in cultivation, it still holds its ground as one of the best flowering bulbous plants we have, though, perhaps, it was more extensively grown a few years ago than is the case to-day. It requires stove-house temperature, and plenty of water during growth, with occasional doses of manure-water, keeping the bulbs but moderately dry in a lower temperature whilst at rest. A little dried cow-manure mixed with the potting soil suits the plants.

BRUNSVIGIA COOPERI.

An interesting Cape-plant, with a globose bulb, and distichous, glabrous, green leaves, 1 foot long and 3 inches wide, which die down before the plant flowers. It produces a scape 1 foot high, bearing from twelve to sixteen flowers on long stiff pedicels in the form of a candelabrum. The flower measures 2 inches across, is crimson in colour, somewhat resembling a tobacco-pipe in its position on the pedicel. The lower segment in the whorl is boat-shaped, the upper segments, stamens and style recurving upwards, to form a semicircle. There is considerable variation in the colours and forms of the flowers of different plants, some of them being really handsome. They would, however, find more favour amongst lovers of the curious than the beautiful. The bulbs may be started in a temperature of 55°, giving plenty of water when in full growth, withholding it as the leaves show signs of resting, placing them outside in the full sun in the summer

to ripen thoroughly. They flower in late summer, the flowers lasting a considerable time in good condition. It may prove a useful plant for hybridising with species of allied genera lacking rich colouring and multiplicity of flowers.

EUCARIS GRANDIFLORA VAR. LOWI.

This grand *Eucharis* has recently flowered at Isleworth, a bulb having been imported in a case of *E. Sanderi* a few years ago. From three to five flowers are borne on a single scape, each measuring 4 inches across and 4 inches in length, with very wide, wavy segments, a dentately lobed, short staminal cup, slender filaments, and a very large stigma. The leaves are slightly wider than those of *E. Sanderi*, but are in other respects similar. In my opinion, the flowers are superior to those of the best forms of *E. grandiflora*; they are quite as fragrant, but do not expand so fully as that species. It is considered a natural hybrid between *E. grandiflora* and *E. Sanderi*; it certainly possesses the same robust, free-growing habit of the latter, with the large flowers of the former species. I have failed to produce seeds on this plant; it may, however, be propagated by offsets, which it produces somewhat freely if given plenty of root-run. *Geo. B. Mallett.*

NERINES.

WITH reference to the article on p. 304, I beg to state that *N. Novelty* is a very free-flowering hybrid, raised by me from seeds of *N. pudica*, fertilised by pollen of the deep crimson-coloured *corusca*; the most distinct varieties among these seedlings produce flowers which after some time take an almost blue shade.

N. sarniensis insignis and *N. s. carnosa* were probably remnants of the original plants brought home by Jacquin from the Cape. I found them at Vienna, and was allowed by the late Court-Councillor, Fenzl, to take two pots, which were simply labelled "*sarniensis*." I hereafter added the two distinctive names. *N. s. carnosa* has flowers slightly larger and more substantial than those of *insignis*, with a decided and very pleasing shade of flesh colour; but it is not so free flowering.

Mr. O'Brien, when manager at Messrs. E. G. Henderson & Son's, raised many first-rate *Nerine* varieties; among a batch of seedlings, the female parent of which was *pulchella*, and which were sent out as *atro-sanguinea*, one of them turned up in the hands of Mr. Mansell, which was afterwards named *Manselli*. This is a very beautiful kind, and has the advantage of flowering when in full leaf, as late as December. I also raised *tardiflora* and *tardiflora major*, which are equal to *Manselli*, but their colour is not of such a bright rose as this. It is this evergreen *pulchella* which should be chosen by hybridists as the female parent to produce a whole range of late flowering *Nerine*, producing bloom freely, late, and when in full leaf. *Max Leichtlin, Baden-Baden.*

SCOTLAND.

SCOTTISH APPLES.

NOTWITHSTANDING much fear of a failure of the Apple crop, the fruits have attained a size and colour such as is seldom seen in this country; and the fruit may fairly be said to have finished in prime condition. Many trees which promised an over-abundant crop were thinned as was then thought sufficiently, but it is now seen that not a few trees have borne too heavy a crop this dry and hot year. Rain has fallen for more than a week, and on October 17, 18, and 19 a gale arose from the south-east which has stripped much foliage from the trees, and spoiled not a few of the latest Apples still remaining. I think, however, that the buds being forward, next year's crop will in no degree suffer from the rude experience they have lately passed through.

Two things have been noticeable in the gardens I have had the pleasure of visiting this year. One, that trees kept open by pruning have borne large crops, while small crops were found in gardens where no

thinning of the shoots is practised. The heads of the trees left unpruned till they form a thick, tangled mass may bear well sometimes; but, as a rule, unless the growths are freely thinned, so as to produce an open crown, there is little hope of a succession of good crops. Apple-trees should always have their branches thinned while the leaves are still on them. The branches, moreover, must be cut smoothly back to those from which they spring, and in the following summer, if any buds produce shoots round the cut, they are easily rubbed off by the hand.

The other noticeable point among Apples has been the unusually fine crops borne by properly pruned trees. I would not say a word against the system that produces extraordinary crops, the fact that the fruit is there being proof that the trees are properly managed. But produce beyond the capacity of the tree or the soil to bring to its normal size is a defect in the system, and it is now—or it should be—fairly well known that the fewer fruits, in reason, a tree has to carry, the finer, under favourable conditions, will the fruit be, and the less likelihood of the tree lapsing into barrenness, and only experience will teach us to strike the mean between too few and too many, and so by relieving the tree of fruit in its young stage, we allow it not only the chance, but almost certainty of producing the size and fine quality which with good culture our climate allows. But the benefit derived from this process does not stop with the production of finer fruit. It also, to a great extent, assures the certainty of a good crop in the year following, and so on indefinitely. I have seen it somewhere pointed out that it is not the pulp of large fruit which affects the vigour of a tree, but the quantity of seeds produced in the fruits of unthinned trees which weakens them in a great degree for the present and future time. That is a fact worth remembering.

The only tree in the gardens here which was this year afflicted by red-spider was one that carried an enormous crop, which was practically of little value, because the fruit was too small, and that because it had not been thinned. Perhaps no one will dispute the above, but I rather fear that many will crave want of time to carry out thinning, and to many gardeners this is a pregnant reason. But after all, I do not think the work absorbs so very much time, I thin the crops of hardy fruit here, and it is generally done by taking an hour occasionally in the evenings. If one needed consoling about the time thus expended over a pleasant task, the consolation would be found at the gathering time, when fewer fruit would need to pass through the hand, and that all of good quality. At the same time, may I ask if the above is not somewhat of a lame excuse? We thin our Grapes and Peaches, and for exactly the same reasons Apples ought to be thinned. No fact has ever received better confirmation that it is not by the thinning of Grapes so much, as by the thinning of the berries in the bunch to the fewest number possible, consistent with their filling out the contour of the bunch, that not only perfect Grapes are produced, but also the healthiest and freest Vines. We think nothing of thinning *Pelargonium* trusses of their pips, or *Chrysanthemums* of their buds, and even cultivate the rough-growing African Marigold with one stem and one flower a top. Why not thin the fruits of the Apple?

It is one of the drawbacks of Apple culture that so many varieties are in the field, and of these we can only by experience satisfy ourselves of their value in any soil or climate. There is yet another point worth noticing. While the already over-numerous early Apples are continuously being added to, late varieties receive few additions. For example, varieties that do not succeed here are Wellington, Cellini, Lord Suffield, Cox's Pomona, and Cox's Orange Pippin.

However, there are many others from which to choose; and for early Apples I would ask for nothing better than Early Julian, known in Scotland as Tam Montgomery, classified also as a dessert fruit; Keswick Codlin, a large and fine Apple, and on several accounts the best of all soft Apples; Ecklinville, well liked in Scotland, and very acid when cooked; Duchess of Oldenburgh, which does well, and the

fruit colours well—and here it sometimes rots at the core. These are cooking Apples; and the following are good for dessert: Early Margaret, Early Peach, which should not be pruned, but only the branches thinned-out; Duchess of Gloucester, Mr. Gladstone, and James Grieve follow. Of Lady Sudeley and Beauty of Bath, I am not sure about them being good varieties for Scotland. Late varieties are King of the Pippins, nearly ready now; Ribston Pippin, Scarlet Nonpareil, Duke of Devonshire, and Cornish Aromatic. And of the later kitchen sorts, not any are superior to Warner's King, Nelson Codlin, Blenheim Orange (not always a sure cropper), Bramley Seedling (which is extra free), and a fine variety; Mère de Ménage, one of our best, but very acid when cooked; Alfriston, which produces splendid fruit, and is always a certain bearer, and the fruits keep till very late in the new year; and Northern Greening, which requires liberal cultivation and free thinning. I should be quite content with the above selection.

In some gardens, Hawthornden, Stirling Castle, Newton Pippin, Waltham Abbey Seedling, Northern Dumpling, Seaton Castle, Lord Grosvenor, Lord Derby, Beauty of Kent, Thorle Pippin, Golden Pippin, Red Calville (call-d Gaivel), and others, are deservedly held in much esteem.

SOME EARLY PEARS AT TYNNINGHAM.

Our trees of early varieties of the Pear have cropped well. I do not remember to have had *Souvenir du Congrès* better flavoured than this year, still, at its best it is insipid, and here the fruits are generally used in the kitchen. Clapp's Favourite, a variety that is, I think, well worth trying, was in Scotland extra good. Dr. Jules Guyot, a fruit very near Williams' Bon Chrétien in appearance and flavour, was this year quite as good as the last named. *Beurré d'Amanlis* is a fine Pear here, but it is difficult to keep, the core rotting soon after gathering. I am now using *Louise Bonne* (Thompson's) and *Beurré Superfin*, both delicious varieties. Knight's Monarch is this year larger than usual. It is constantly found fault with because some of the fruits drop; but severe thinning will cure this propensity. Late Pears are this year generally a poor crop, and reliance will have chiefly to be put on Winter Nelis after Christmas. Fortunately, there is none better. *Beurré Rance*, *Beurré Diel*, *Glou Morceau*, and other late Pears tried here are not to be depended upon to ripen fit for dessert. *R. P. Brotherton.*

CHRYSANTHEMUMS.

(Continued from p. 842.)

MR. E. F. SUEH'S NURSERY, MAIDENHEAD.—Here the great specialty is the production of *Chrysanthemums* for cut flowers, immense numbers being sent to Covent Garden and elsewhere, and some 60,000 plants of the principal early-flowering varieties are grown outdoors. The weather in the last month was favourable for the flowering of the plants, and on the day of my visit (October 28) the masses of colour presented an imposing sight, notwithstanding that quantities were being cut daily. Nearly an acre of one variety, *Flora*, alone is grown, a free yellow Pompon; and a large batch of *Harvest Home*, a rich bronzy-red, with gold tips to the petals, was really charming, and for general cut flower purposes nothing in the colour could be better. *Crimson Queen* was another very free and effective flower, reflexed crimson, dwarf, with stout, erect stems; *Ivory* was a very dwarf and pure white; *Ambrose Thomas*, reddish-bronze, 2 feet high; *Gustave Grunerwald* had been much cut over, but a quantity of nice flowers yet remained; *Gaspard Bouchardat*, a small bronze Japanese, very dwarf; *Sunshine*, rich bright yellow, of similar type, was also very attractive; *Strathmeath*, an old Pompon variety, was blooming freely, and had been in flower the past two months; *Roi des Précoces*, an old variety, colour rich crimson, was also doing well; *Edie Wright* is a pretty pink variety; *Queen of the Earlies*, pure white; *General Hawkes*, purple-crimson; and *O. J. Quintus*, pink. These, and many others, in smaller quantities, were blooming in perfection in the open at the end of October, while temporary glass structures had been

erected over large quarters of G. Wermig, Madame Desgranges, and a few others. A good representative collection of Japanese and other varieties is grown, but no attempt is made to produce large flowers; quantity for market, and the usual cut flower and plant trade, being the chief considerations at this establishment. C. H.

Downside, Leatherhead.

Naturally, when any grower attains to the high position which Mr. W. Mease, Mr. A. Tate's able gardener, has, as an exhibitor of Chrysanthemums, the condition of his flowers at the commencement of an exhibition season arouses special interest. This year he seems to be in first-rate order for taking the field, especially with Japanese, as with these he is exceptionally strong. In wonderful "form" indeed must be the grower who is better. Whilst he has a very fine collection of incurveds; these are later, but no doubt there will be some first-rate blooms formed a week or so hence. Mr. Mease is less enthusiastic over the incurveds than he once was. Apart from the fact that the Japanese give so much more variety in form and in colour, and so much more to look at, they give less trouble also. Then there was form in the old incurveds of the Queen and Roman types, but the fine quality shown in these is now being submerged in the big semi-Japanese incurveds that are in vogue, and these do not find favour, at least, so far as the incurved quality is furnished, with an old grower. Practically, incurved form is being so much merged into the Japanese type, that it seems hardly worth while to retain the distinction which was for so long dear to Chrysanthemum florists.

Foremost amongst the Japanese novelties at Downside is R. Hooper Pearson, a most brilliant orange-yellow flower—form of Chenon de Leché [or Mutual Friend]; without exception the most brilliantly coloured of all the yellows. It is decidedly superior for depth of colour to Modestum. This is one of Mr. H. J. Jones' seedlings, and should make a sensation in Chrysanthemum circles.

Taking the varieties as they come, the following were wonderfully fine, really superb blooms, whilst many have to be left unnamed:—Mrs. C. H. Payne, Swanley Giant, very fine, having both white and pink blooms on the same plant from diverse buds; Mrs. J. Lewis, Madame Gustave Henry, Robert Powell, better than Col. Smith; Australie, Mrs. F. A. Bevan, Mrs. C. Orchard, Mrs. W. Mease, here very distinct from C. J. Warren; Madame E. J. Nosette, Miss Nellie Pockett, very beautiful; N. C. S. Jubilee, Modestum, James Bidentope, magenta, white reverse; E. Molyneux, exceptionally fine; Mrs. White Popham, very fine blooms; M. M. de la Roche-tierre, fawn colour; Lady Ridgway, C. H. Payne, Mrs. G. W. Palmer, M. Pankoucke, Mutual Friend, Madame G. Bruant, very finely coloured; Madame B. Rivoire, Oceana, Madame Chenon de Leché, wonderfully fine and beautiful; Surprise Admiral, Mrs. E. Cannell, C. W. Davis, Pride of Madford, Miss Elsie Teichmann, Joseph Brooks, Simplicity, Robert Owen, Ella Curtis, Graphic, Matthew Hodgson, rich chestnut; Phœbus, and many others.

Amongst incurveds, the following were of great promise:—Robert Petfield, Duchess of Fife, G. Haigh, C. H. Curtis, Princess of Wales, Mrs. Heale, Violet Tomlin, J. Agate, Prince Alfred, Empress of India, John Doughty, Globe d'Or, R. C. Kingston, Lucy Kendall, Jeanne d'Arc, Brookleigh Gem, Robert Cannell, M. T. Martignat, Dorothy Foster, Ma Perfection, Madame Ferlat, Lord Rosebery, Austin Cannell, and Princess Beatrice.

The plants, of which there are several hundreds, are staged well up under the glass in two large span-houses, and every facility is furnished to enable them to be seen at their best. Out of so large a collection, many escape notice—perhaps because rather late; but these will also in due course present grand blooms for later exhibitions. A. D., November 2.

THE CHELSEA COLLECTION.

Messrs. Jas. Veitch & Sons, at the Royal Exotic Nursery, Chelsea, have this season a collection of Chrysanthemums numbering nearly 1000, 600 of

which are grown on the standard-system, for the production of specimen blooms. Though Chrysanthemums are not treated as a specialty, but rather as a feature of the soft-wooded department, and there are no seedlings to be noticed in the collection, it at the same time includes the cream of the novelties distributed even as late as last spring.

Chelsea is not an ideal situation for the cultivation of Chrysanthemums, and some varieties that have a disposition to "damp" in any locality, have a habit of exhibiting this quality to an unusual extent there. But Messrs. Veitch's capable cultivator, Mr. Weeks, contrives to produce an exhibition of the flower that would be creditable in any district.

It is one satisfaction to know that the "rust" though imported to Chelsea in the spring, has failed to propagate itself there. The following varieties were some of the novelties that were in best form at Chelsea: Nellie Pockett the fine white Japanese from Australia (F. C. C., N. C. S.); Mrs. J. W. Barker, the pretty sport from the ever popular Edith Tabor; Marie Calvat, which promises very well; Chatsworth (F. C. C., N. C. S.), the white Japanese, having petals marked with reddish-purple; Mrs. Mease, the most delicate of the Madame Carnot type, its pale primrose or lemon-tinted florets being peculiarly attractive; Mrs. Hugh Crawford, one of Mr. Jones' good yellow Japanese of last season; Mrs. Philip Mann, a pale yellow Japanese (Godfrey); Mrs. Weeks, a most handsome white incurved Japanese that is given at Chelsea to "damping;" Mr. T. Carrington, and others. But some of the older varieties have been proved to be extraordinary good "townsmen," and it is interesting to record the names of a few of these as a guide to urban cultivators. G. C. Schwabe, for instance, the well-known Japanese variety, with purple and buff colours, is almost always good at Chelsea, and it accordingly is not displaced by the new comers; then Wm. Tricker, a bright-pink flower that has gone through almost every collection, generally succeeds well; Modestum, the rich yellow novelty of a couple of seasons ago, was in fine condition; Lady Byron, too, was good, but the variety is not free from a liability to "damp." In mentioning Modestum we should have included with it another rich yellow Japanese in Phœbus. There were some good blooms of N. C. S. Jubilee, an incurved Japanese of silvery-pink colour; and of the beautiful drooping Sunflower, sometimes difficult of cultivation, but always very charming when seen in good condition. Like the last-named variety, Robert Powell is not always a success, but on the present occasion there were very fine flowers.

The several hundreds of bush-plants were looking well, and some time may be spent in noticing the adaptation of the many varieties for this system of culture. Most of them may be used, but some are more suitable than others. We saw none afford better effect than the well-known white Japanese Souvenir d'une Petite Amie, and the yellow-flowered Amiral Avellan. Ryecroft Glory was looking very bright in small pots, as partially-thinned bush-plants.

We may add, for the consolation of other cultivators who may think they have been specially unfortunate, that, in the show varieties, the grower has had to contend this season against a number of "hard" buds.

THE DOVER HOUSE COLLECTION.

There are few cultivators in the suburbs of London, we believe, who have this year a more satisfactory collection of Chrysanthemums than usual, but this is the case at Mr. J. P. Morgan's establishment at Roehampton. "There has been only one 'hard' bud," said Mr. McLeod a few days since, when showing us his plants. They have already won a 1st prize at Kingston in the twenty-four Japanese class, and 2nd and 3rd prizes in important classes at Wandsworth. About 800 plants have been grown this season, but of this number a proportion have been cultivated as bush-specimens, or for the supply of decorative blooms only. A few days ago the collection appeared to be at its best, and the selected plants were then arranged in one of the vineries. They were faced with a band of Salvia splendens

grandiflora, and together with this uncommonly bright scarlet flower they made a capital picture. The foliage was hardly less remarkable than the flowers, but the height of some of the plants is a trifle more than usual. The best of the older and the cream of the new varieties are here merged together, there being few of the valuable novelties but are in evidence. Lady Ridgway, Sunflower, Edith Tabor, and the pretty variety, M. Chenon de Leché, were especially true to character, and there were very fine blooms. Surprise, too, was most effective, and should be in every collection, by reason of its distinct colour (reddish-purple, with silver reverse), and its very dwarf and excellent habit of growth. Lady Byron, Mutual Friend, Mons. C. Molin, Mrs. R. C. Probyn, Oceana, Jas. Bidentope, Lord Brooke, Madame Carnot, the white and lovely Mrs. H. Weeks, may also be mentioned as extra fine. Lady Oporto Tait, sent out by Mr. Cannell, is going to prove an extraordinary good flower. The great width of the petals, its rich old-gold colour, and moderate height of the plants, are its points of value. Desdemona is pleasing, as offering a change from the solid blooms of some other varieties. It produces moderately few drooping petals of white and pink colours. It is very charming. There were many other varieties of Japanese, as well as the incurved section, that merited notice, but space forbids.

The "rust" was seen in this collection two years ago, but has not reappeared, although, said Mr. McLeod, no particular steps were taken to ensure this. R. H. P.

MESSRS. H. CANNELL & SONS.

Few of present-day cultivators are more familiar with the early history of the Chrysanthemum in England than is Mr. H. Cannell, sen., of Swanley. To this fact it is due in a measure that an inspection of this collection is usually of exceeding interest. From Mr. Cannell's anecdotes, one gets a few sidelights upon the earliest exhibitions, when the then novel Japanese varieties were considered contemptible, and the formal Chinese incurved flower was lauded as the only correct type of the Chrysanthemum.

Although November was a week old when our visit was made, the sun was glorious at Swanley, almost hot, and Dahlia flowers were abundant in the open. Most of the Chrysanthemums were arranged in the large span-roofed house annually set aside for their display, and in this was a very fine show indeed, and some capital blooms.

One of the features in this collection consists in a number of varieties from M. Delaux, possessing flowers with striped petals. A few of them appeared to possess qualities that may make them popular varieties providing they will come to sufficient size, and even should they fail to do this, they would be useful decorative flowers. The following were the best of Delaux's seedlings: Walter Klapp, a buff-coloured Japanese, striped with purple, inclined to be a little rough as seen; Madame la Colonel Gurnier Durand, a large reflexed Japanese white, conspicuously marked with purple stripes; Gaston Morin, also a reflexed Japanese, white, striped purple, a good grower with strong healthy foliage. Miss Mary Underhay is an Australian variety, a creamy-yellow Japanese incurved of promising character. A white sport from Mrs. C. H. Payne is named Madame Louis Remy; it is a pure white flower of the same characteristics as the type. Then Mr. N. Molyneux, a pretty white Japanese, has just sported yellow, and the novelty is to be known as Mrs. Thos. Wood. There is an American variety named W. H. Longfellow, that promises to make a large white flowering Japanese. Some flowers were still to be seen of Kathleen Rogers, a white flowering Japanese incurved, to be sent out next spring. This long-petalled Japanese comes as much as 15 inches across, and will make one of the very largest and best early bloomers.

There were some good flowers of Swanley Giant, a large incurved Japanese sent out by Mr. Cannell last year, and of Baron Tait, a yellow Japanese also sent out last year. The petals in this case are reflexed, and the type reminds one of Madame Carnot. Mr. P. Carrington, an Australian incurved Japanese, was noticed, and several of Calvat's novelties, including

the beautifully-tinted Melucina, a pure Japanese of delicate rosy-purple and white.

An unusually pretty novelty is Madame Gabrielle Debrie, a flower of the style of N.C.S. Jubilee, but lighter and more delicate in shade; the flower is large, and the petals good. Mlle. Gabrielle Seince is a large white Japanese already noticed in several collections this season, and Mrs. Randerson (?) is a very pale primrose Japanese of good depth. There were some capital blooms of Edith Tabor, and of the sport from this, Mrs. J. W. Barks. A pure white incurved of last year, named Yvonne Desblanc, was seen in good character; also Lord Justice Lopes, a rosy-purple incurved, with silvery reverse. But Mr. Cannell has an excellent seedling incurved variety, as yet unnamed. The petals are amaranth in colour, and the reverse purple and silvery; it will apparently make a very large flower, and need little "pulling up." Duke of Wellington has become a truly incurved flower at Swanley this season, and Chrysanthemum Miss Bruant is another incurved Japanese, noticed to be almost as well built as the true incurveds.

In another house was a collection of decorative Chrysanthemums, in which we found the different types and varieties of great interest in their curious forms and peculiar tints. The yellow-flowered Mrs. Filkins, for instance, was seen here, and a new white-flowering variety of the same type, with similarly twisted petals. This novelty will be a very popular one; it does not open pure white, but becomes so before the flower is fully developed. The yellow Mrs. Jas. Carter, also, was noticed here; and a single-flowering variety known as Madge is worthy of mention, through its curious mixing of crimson and yellow and white. There were many varieties of singles just at their best, and they were very attractive. We must not omit to mention Black Hawk, the darkest crimson Chrysanthemum we remember to have seen. It came from America last year, and is a reflexed Japanese, that for decorative purposes will be most valuable, as affording crimson colour of a most effective shade.

MARKET GARDENING.

BULBOUS PLANTS.

THE present is a good time to make plantings of most kinds of hardy bulbs out-of-doors for yielding supplies of cut-flowers for marketing next spring. Foremost among the numerous kinds and varieties of bulbs enumerated in the extensive and admirably got-up catalogues issued annually by our leading nurserymen and bulb-merchants, are Daffodils (double and single-flowered), Hyacinths, Tulips, Spanish Iris, Snowdrops, and Montbretias. Alba plena odorata and Van Zion are the best double Daffodils to grow; Horsfieldi, Bicolor Empress, Poeticus ornatus, and Telamonius being about the best single-flowered varieties. Hyacinths of three distinct shades of colour—red, white, and blue—will be ample, and the same may be said of Tulips, La Candeur (pure white), Rex rubrorum (bright scarlet), both producing double flowers, and the single and sweetly-scented Yellow Prince. Good spikes of Spanish Iris in various rich shades of colour—that is, mixed varieties, command a ready and remunerative sale, as also do the flowers mentioned above. Of the twenty or more varieties of Montbretias now in cultivation the old *M. crocosmiflora* is the best for marketing and other purposes. All the bulbous and Iridaceous plants indicated above will pay well for generous cultivation. If the bulbs are dibbled into ground of medium texture, into which a necessary dressing of short manure has been dug or ploughed, they will take care of themselves. A space of 1 foot will be none too much to allow between the rows of Daffodils, Hyacinths, Tulips, Spanish Iris and Snowdrops, making the holes about 6 inches deep, and at the same distance from hole to hole in the row, closing in the soil over the bulbs with the setting-stick in planting, and the work is completed. Where plenty of light manure is at hand, a surface-dressing of it placed over the ground will

prove beneficial. Bulbs of the description mentioned may also be planted with advantage in orchards and such-like places in good-sized holes made with a crowbar, dropping a handful or two of fine rich soil into each hole before and after depositing the individual bulbs therein. Bulbs planted as indicated will annually increase in size and floriferousness, and in a short time more than pay for the initial cost of bulbs and planting.

Montbretias should be planted about 6 inches deep, in rows about 18 inches apart, and at the same distance in the rows, planting the bulbs in patches of from five to seven bulbs in a patch. In point of usefulness, graceful habit of growth, colour, and freedom of flowering, few flowering plants can equal the *Montbretia crocosmiflora*; the plant is perfectly hardy, and, as already stated, exceedingly floriferous, producing several branching spikes thickly furnished with golden-coloured flowers, the spikes showing well above the elegant Gladiolus-like foliage, being from 20 inches to 30 inches high, according to the fertility of the soil. From three to five or more of the arching spikes, according to size of vase which they are intended to embellish, tied loosely together and garnished with their own foliage, are highly appreciated by both florists and customers alike, the flowers, in addition to their attractive form and colour, keeping a long time in a cut state in water. *Montbretias* planted as described above become so well established in the course of two years as to require transplanting in fresh ground in reduced patches, and October is undoubtedly the best time for doing this. No time need be wasted in sizing the bulbs in the process of transplanting; all that is necessary, the ground having been previously manured, and either dug or ploughed, is to put down the line, open holes at from 18 to 24 inches asunder, and into these drop a cluster of roots taken off the established plants with a sharp spade, burying the crowns about 6 inches from the surface, filling in the holes, and pressing the soil about the roots in doing so. Where large plantings of this charming plant are contemplated, the most expeditious and economical way to do the work is to plough them in—namely, to deposit about five bulbs in every third furrow, in patches about 18 in. apart, several persons being placed at short intervals along the furrow, placing the bulbs in position in order to keep two ploughs going without loss of time. I believe my experience of *Montbretia crocosmiflora* leads me to say the plant is perfectly hardy in any part inland of England, Ireland, and Scotland, when planted about 6 inches deep in land inclined to be light in texture rather than heavy, and dry rather than wet. I may say, that in consequence of the demand being so good for bunches of *Montbretia*, arranged as described above, for the shops, I am now extending my planting, in order to meet the demand, doing the work in the manner set forth above, but with line and spade in my case. *H. W. Ward, Rayleigh.*

CHRYSANTHEMUM NIPPONICUM.

ATTENTION was called to this as a winter-flowering greenhouse plant in the *Gardeners' Chronicle* for January 16 last year, p. 46. A group of plants of it may now be seen in flower in the temperate-house at Kew. They are compact shrubs, 18 inches in height and diameter, the erect branches clothed with dark green, oblong, spatulate leaves, 3 inches long and 1 inch wide; and numerous daisy-like flower-heads, 3 inches across, the yellow disc an inch across, and the whorled white ligules an inch long. Each plant bears about fifty of these flower-heads, which open slowly, and promise to remain in good condition for several weeks. The treatment the plants have received has been exactly that of the ordinary Chrysanthemums as regards soil, water, and exposure, but they are eighteen months old. Some of the flowers lack regularity of form, due probably to want of bright sunlight; but, on the whole, the plant deserves the attention of horticulturists, and especially that of breeders. It is of about the same degree of hardiness as the common Chrysanthemum. [Our illustration (fig. 104, p. 349)

is taken from a specimen obligingly furnished by Mr. Gumbleton. The plant was originally described by Franchet in the *Bull. Acad. Imp. Sc. Petersb.*, xvii. (1892), 420. See also Franchet and Savatier, *Enum. Pl. Jap.* 1, 254. Ed.]

BROOM HOUSE, FULHAM.

[SEE SUPPLEMENTARY ILLUSTRATION.]

IN our issue for September 22 was published a photograph of a very fine specimen of the Purple Beech, growing in Miss Sullivan's garden. But that tree does not by any means exhaust the interest possessed by this remarkable garden, which on one side is bounded by the Thames, and on another adjoins to the grounds in the occupation of the Hurlingham Club. The visitor is surprised to find so fine and so interesting a garden in an area now well within the London smoke district. Miss Sullivan's object is to have something of everything from February to October, and there is not a day in the year on which something of interest may be found.

The gardens and grounds of Broom House include about 10 acres, but the large kitchen garden and fruit and plant-houses are separated from the house and pleasure-grounds by Broom House Lane. By reference to the illustration, a good idea may be obtained of the garden immediately contiguous to the house-front, which is the river side of the residence, as already stated. In front of the house will be seen a hedge of Box about 4 feet high. During the summer this is more or less covered with flowering climbing-plants, such as *Tropæolums*, *Convolvuluses*, &c. These probably injure the hedge somewhat; but as Miss Sullivan remarked, "they look very pretty, and it is not for long." In a more remote position in the grounds one sees Hops and *Ampelopsis* climbing over Holly bushes, and over stout wooden props. Doubtless both are encouraged from a desire to see these plants growing as naturally as may be. Very close to the Box-hedge are the small beds that form the parterre flower-garden, with gravel-walks intersecting them. These have been planted this season with bedding-plants of neat habit, and have been very gay. To right and left of these, however, are beds of large size, and looking for a moment at one of them, one understands how it is, that in a comparatively small garden, Miss Sullivan appears to have something of everything. It is a square cut bed about $4\frac{1}{2}$ yards by 4 yards; in it we noticed four varieties of *Pelargoniums*, blue-flowered *Ageratums*, two varieties of *Marguerites*, *Coleus* and *Lilium candidum*. There was no mixed planting, but each variety was allotted a certain portion of the bed. This will give a key to the bedding throughout, and consequently there are few, if any, good bedding plants but have been represented there during the season just closed. Bulbs are now being planted in most of these beds, and the garden during spring presents a beautiful and varied picture. But after all, the flower-bedding is not so interesting as the numerous species of herbaceous, bog, alpine, and other plants that in all sorts of out-of-the-way but specially suitable places are cultivated with success. There is a rockery that screens a dividing wall, and is much shaded by trees. It is consequently planted chiefly with Ferns, including most of our British varieties, but a few alpine plants grow there. A better rockery, however, is one that has been made near to the embankment of the river, and in full sunshine. To the visitor, it would seem that the atmosphere would be too moist for the well-doing of alpine plants; but Miss Sullivan says that the river being a tidal river, there is plenty of fresh air, and the plants succeed well. Near to the rockery is a small pond, and in the immediate surroundings are suitable species of plants, as, for instance, *Hydrophyllum virginicum*, *Hydrangea hortensis*, several species of *Iris*, *Rhus glabra laciniata*, a very graceful plant, with much-divided leaves; Bamboos, Cannas, *Aralia pentaphylla* (or, to be more correct, *Acanthopanax spinosum*), 13 or 14 feet high; *A. Maximowiczii* (*Acanthopanax ricinifolium*). There is a fountain also, and a large stone basin. Round this are other



FIG. 104.—CHRYSANthemUM NIPPONICUM: COLOURS WHITE AND YELLOW. (SEE P. 348.)

(Pollen grains $\times 400$. Floret of the ray, and floret of the disc $\times 4$.)

uncommon species. The pretty little *Saxifraga sancta* grows close to the stones, in a clump about a foot across. It is rarely seen so vigorous, but Miss Sullivan has studied its needs, as she has done those of most of her plants, and she has found that it does not like to be watered overhead. Now a little pipe runs underneath its roots, and the necessary water is supplied by this means.

Miss Sullivan has a bog garden. It is a sunk bed, and by means of a perforated sunken pipe, the earth can be maintained at what degree of moisture is desired without any overhead waterings. Here are *Osmundas*, *Ranunculuses*, *Pratia angulata*, with its seed-pods almost like purple Turnip-rooted Radishes; *Anemone sylvestris*, *Hellebores*, *Saxifraga peltata*, *Lysimachia brachystachys*; the pretty little *Sibthorpia europæa*, and the more delicate variegated variety, *Eulalia japonica*, &c. Large beds containing herbaceous perennial flowering species, with a few Dahlias intermixed with them. The *Physalis* was pretty in these beds recently. To the right of the residence there may be seen in the photograph an old Pine-tree with a top as flat as a table. Near to this, a small lean-to glasshouse has been built, in which there were Rose-trees, and tree-Carnations planted out, a few plants of the Malmaison varieties being in pots. Some Freesias are just showing above the surface-soil—not in pots, but in the bed. The little house is surrounded by a miniature garden, where recently there were Tuberoses in bloom planted out there when the plants were quite small; also *Crinum Moorei* in bloom, early flowering *Chrysanthemums*, hybrid Cannas, Carnations, &c. Two large clumps of *Yuccas* are observed close to this house also. The conservatory attached to the house contained species of plants generally used for the adornment of like structures, but preparations were about to be made to furnish it with *Chrysanthemums*.

The old Scots Firs upon the place are looking but poorly, for they are evidently slowly dying out.

There are some fine Beech-trees in addition to the purple-leaved variety to which we have already alluded. A good specimen of the Liquidambar close to the house is, said Miss Sullivan, the only tree that has presented a good colour this season. The deciduous Cypress *Taxodium distichum* and the Tulip-tree are nevertheless represented by fine examples.

The kitchen garden and glass structures on the opposite side of the lane are under the capable supervision of Miss Sullivan's gardener, Mr. Wilson, who has been at Broom House a number of years.

CULTURAL MEMORANDA.

CALADIUMS.

The tubers of these should be very carefully dried in a warm house when the foliage begins to decay, and in this house the tubers should be kept throughout the winter. Some gardeners shake the tubers out of the soil, and place them in smaller flower-pots. I have also remarked them being wintered very successfully several in large pots filled with dry sand, and stood in the dry part of a stove, very successfully. *H. M.*

ARGYREIA SPECIOSA.

This plant forms a pretty climber for the stove, being attractive both on account of its flowers and its silvery foliage. This species is a strong grower, requiring a spacious run for its long, twining stems. The flowers are produced upon a strong peduncle about as long as the leaves, and are large and not unlike single blooms of a *Gloxinia* of a pink and purplish colour. The leaves are ovate-cordate, glabrous, and are rich green upon the upper surface, covered with a silvery tomentum beneath, with which the petioles and younger stems are also covered. A good rich compost of peat and loam suit this species well.

LEONOTIS LEONURUS.

This old plant is adapted for walls or pillars, where it will soon cover a considerable space. A plant is now in flower in the corridor here; it is about

12 feet in height, and more than 6 feet broad, and almost all the growths bear three or sometimes more umbels of rich reddish flowers. The foliage is oblong-lanceolate, with serrated margins. Of a robust habit, this plant seems capable of growing in almost any soil; here it is grown in pure loam and sand. Given a sunny position in a greenhouse, it will give an abundance of bloom in September or October. This plant is said to have been in cultivation at Chelsea Botanic Garden in 1712. *R. L. H., Edinburgh.*

WALLFLOWERS.

A good batch of these plants raised from early summer sowings if taken up at this season, and potted and wintered in cold frames, will be found useful for a variety of purposes early in the spring. The Belvoir Castle Dwarf Yellow makes a capital pot plant, as does Covent Garden Blood-red as a dark-flowered one. The plants should be lifted with a reasonable amount of soil adhering to the roots, and firmly potted in 32's, in a mixture of sound loam, free from wire-worm and weevil-grub, and well-rotted manure. Let the plants stand on a firm bottom of coal-ash impervious to worms; they must not be allowed to get dry at the root, or many of the leaves will drop off. *M.*

MYOSOTIS IN VARIETY.

These may be similarly treated. The plants will be found of use where the greenhouse has to be kept gay in early spring. *Myosotis* should not be kept in a very moist house during the winter, and they should at all times receive as much fresh air as it is possible to afford them.

TOMATOS.

In order to secure an early crop of fruit, it is prudent to make a sowing this month, and to grow the plants steadily in a light position in a warm house, say, the earliest vinery, the plants remaining in the house, if a vinery, till a good set of fruit is secured, by which time the foliage of the Vines will have rendered their removal to a lighter house necessary. Tomato-seeds require but little water till germination has taken place; and when the young plants possess a pair of true leaves, they should be potted two in a 60-sized pot, but grown on singly at the next potting. A somewhat sandy compost is the best at the winter repotting, and the gardener should rather err on the side of small shifts, and a dryish state of the soil. The plants do best and grow sturdiest if kept near the roof-glass in a house having a temperature of 60°. As the days lengthen, the degree of warmth should be raised from 60° to 65°, and higher during sunshine. The plants should not be allowed to make lateral shoots, and repotting should be made finally into 10-inch pots, the soil made use of this time consisting of rich loam, mixed with spent Mushroom-bed manure, and mortar-rubble added. Trustworthy varieties are *Chemin Rouge*, *Ham Green Favourite*, and *Duke of York*. *H. Markham, Northdown, Margate.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Imantophyllums.—Afford these plants cool treatment, and keep the roots on the dry side, over-watering being apt to cause the tips of the foliage to become yellow, and eventually to die back to the root-stock. Seed of any particularly good varieties, if ripe, should be dried and sown in a pot or pan placed in a temperature of 60° to 65°. It is advisable to cultivate seedling *Imantophyllums* in an intermediate-house, as they will make greater progress there than in a greenhouse at this season.

Nerines.—Any bulbs which need re-potting may now be attended to. In the ordinary way annual re-potting is uncalled for; but top-dressing with rich soil should always be attended to yearly. A good potting-soil consists of sandy-loam three-parts, decayed dry cow-manure one-part, and coarse sand. When the bulbs are making growth, plenty of water is required; but during the rest-period, which extends from May to September, water ought to be withheld. The bulbs may be placed on a shelf in the greenhouse or similar structure for the present.

Hippeastrums.—By this date the latest bulbs will have completed their growth, and they may be stored away for a time to rest, being kept dry. A batch of the earliest-rested bulbs may have the old soil shaken

from them and be repotted, and placed in the forcing-house, plunging the pots if possible in a mild hot-bed; very little, if any, water will be required by the bulbs before they have grown a little.

Gloxinias and Tuberous Begonias, which have been dried off, should be shaken out of the old soil, and stored in dry Cocoa-fibre refuse in a dry shed that frost cannot enter; they will keep sound till potting-time comes round again. *Achimenes* may be similarly treated.

Lilium Harrisii.—The bulbs should be placed on a greenhouse shelf close to the glass when growth has fairly begun. Afford the bulbs water as soon as they are removed to the house, and do not allow the soil to get dry.

Mignonette.—These plants should be grown close to the glass, and air freely afforded when it does not freeze, the forwarder plants being stimulated with weak manure-water twice in a week or ten days.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford, Kent.

Conifers.—There are but few plants, if judiciously placed, which are as capable of adding to the attractiveness and charm of a garden as well-chosen Conifers. The choice of species should be guided by their hardiness, their ultimate dimensions, the sort of situation, whether sheltered or exposed, a wet or dry soil, and the nature of the last. Some Conifers are not particular as to soil, and will grow in any sort of pure sand; some succeed in swampy land, or on its margin, as for example *Sequoia sempervirens*, *Taxodium distichum*, *Pinus Strobus*, *Juniperus virginiana*. None, however, likes water stagnant always in the soil, and all or almost all are more at home on hillsides than flat land, or at least their effectiveness is greater. As a windbreak there is nothing better than the black Austrian Pine and *Pinus Pinaster*. But as most old gardens are usually well sheltered from the wind, and new ones can be afforded shelter in a few years, I will mention the names of a few species which are ornaments to any garden, assuming that proper stations are made for the trees, and there is some kind of surface-feeding or extension of root-run as time goes on, and the roots spread. The smallest station should not be less than 4 feet in diameter and 2½ feet deep. The preparations for planting are the same as for a fruit-tree minus the manure, and Conifers will not have any of that. The actual process of planting is the same if young plants without ball are employed, and even the knife may be used to reduce the number of leaders, or to produce a properly balanced head. The species to plant may consist of *Abies pungens*, *Picea excelsa*, the Norway Spruce, in its many varieties; *A. Menziesii*, *P. nigra*, *P. orientalis*, and *P. polita*. These are true Spruces (*Picea*). Then of Silver Firs (*Abies*), *A. amabilis*, *A. cephalonica*, *A. concolor*, *A. c. Lowiana* (*lasiocarpa*), *A. grandis*, *A. magnifica*, *A. Pissapo*, and *A. Webbiana*. The Hemlock Spruce (*Tsuga*) offer several fine garden trees, viz., *T. Albertiana*, the Columbian Hemlock; *T. canadensis*, and its variety; *Douglasii* (*Pseudo-tsuga*); and *T. Pattoniana*, *Araucaria imbricata* (where there is no chalk in the soil); *Cedrus atlantica*, *C. Deodara* in its varieties, *C. Libani*, *Cryptomeria japonica*, *C. j. elegans*, and *C. j. e. nana*; any of the Cypressess and *Juniperus*, and Cypress-like *Junipers*; *Larix Kämpferi* the Golden Larch, and *Libocedrus decurrens*. The genus *Pinus* does not offer so many garden trees of elegant form, but a few ought to be planted, if only for the beauty of their stem when aged, as the Stone Pine *P. pinea*, *P. sylvestris*, *P. Coulteri*, *P. insignis* (only in warm counties), *P. Jeffreyi*, *P. Sabiniana*, *P. Ayacahuite*, *P. Cembra*, *P. excelsa*, *P. Lambertiana*, and *P. Strobus*. Any of the *Thuias* are suitable garden-trees, and all very beautiful; as also *Thuiopsis borealis* in variety, *T. dolabrata* and its varieties, and *Sequoia gigantea*. These are enough for any garden of moderate size, as each will require ample space for its full development. The plants should be staked at the time of planting, and if planted on the turf no sods should be laid within 1 foot of the stem.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Selection of Plums for Gardens.—Some readers of the *Gardeners' Chronicle* may be glad to obtain a select list of Plums for garden planting. Early

Prolific (Rivers), Early Orleans,* Prince Englebert,* Denyer's Victoria,* Belle de Louvain, Denniston's Superb,* Kirkes,* Large Black Imperial, Common Greengage,* McLaughlin's Gage,* Jefferson,* Pond's Seedling, Washington,* White Magnum Bonum, Archduke, Monarch, Grand Duke, Golden Transparent Gage (Rivers),* Reine Claude de Comte Althann,* Oullin's Golden Gage,* Reine Claude de Bavay,* Rivers' Late Orange,* Coe's Golden Drop;* and for preserving and kitchen use, the small white and yellow fruited Mirabellas, which crop well as a standard. It is like a Damson in size and growth, but white or pale yellow. Those marked * are dessert varieties.

Plums may be trained in the fan-shape, and grown on east or west aspects, in districts that are not warm enough for the fruits to ripen on standards, bushes, &c. In the south most of the varieties do well as standard trees, but in the Midlands only occasionally are crops of fruit obtained in this way. The Victoria, Black Imperial, Jefferson, and Prince Englebert, are amongst the surest cropping varieties.

Selection of Cherries.—I will do for this fruit what I have done for Plums, namely, mention some select varieties of merit:—Elton, May Duke, Governor Wood, Early Rivers, Monstrueuse de Mezet, Bigarreau de Schrecken, Bigarreau Napoleon, Bigarreau Noir de Schmidt, Late Black Bigarreau, Géant de Hedelfingen, Reine Hortense, St. Margaret's, Guigne de Winkler, Morello, and Belle Magnifique, a red Morello. Cherries fail in some soils owing to lack of lime, a large quantity of which is removed by the stones of the fruit, and excepting on land overlying chalk or limestone, provision should be made for this at the time of planting, by incorporating finely-broken chalk or old plaster with the staple. A soil rich in nitrogen is also unsuitable for Cherries, as it fosters a too vigorous growth, and sets up gumming of the branches; and soil which has been highly manured should be removed from the sites of the trees, and be replaced with some sound loam from a pasture. The fan method of training is best for the Cherry, the single upright cordon suits the Bigarreau section, and the trees bear well for a few years, and can be made to cover a wall quickly by planting them at 2 feet apart. The early and mid-season varieties do well as standards, but cannot be grown in many parts of the country, owing to the partiality of the birds for the fruits. The Morello and Belle de Magnifique bear well in the bush-form if pruned annually, and they are then easily protected.

Planting.—Owing to the rains, the soil is in fine condition for transplanting all kinds of fruit-trees, and planting operations should be pushed on rapidly. No trees recently planted should be pruned, as this would only defeat the end in view—the production of roots; but all the leaves and points of branches should be preserved, and the trees securely fastened to one or three stakes, enough freedom being secured by loose tying to allow the soil and the tree to settle, a light mulching of half-decayed leaves or litter being spread over the roots at once. In planting trees in heavy soils do not make the bottom of the hole impervious to water by tramping it, although some degree of firming is very needful, and a small quantity of fresh soil should be afforded each tree, as this encourages the emission of roots, but manure should not be applied to young trees at first. In planting, all tap-roots should be shortened back, jagged ends cut smooth, and suckers removed. [It seems to us essential that standard trees should have the tap-root preserved, so as to afford stability against wind by anchoring the tree in the soil.—ED.] If the soil be wet it should not be trampled, but thrown in firmly with the spade and left to settle without being touched during the winter.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Seakale.—If the plants have been prepared as directed in a former Calendar of mine, the present will be a suitable time for forcing them in heat. Having dug them out of the ground with all their roots, putting these aside, and plant the trimmed roots if possible, trim off the long, slender "thongs," crowns pretty close together in wooden boxes or large pots, with some light soil firmly tacked in betwixt them, and place these in a dark room, cellar, or Mushroom-house, covering them with clean straw, and over all a garden-mat. The main things are perfect darkness, and a warmth of 55° to 60°. It is not advisable to force a large number of roots at

one time during this month, as Seakale forces much more rapidly in the true winter months. The thongs should be laid in for making sets at a later date. Other roots may be dug up, and after being prepared as described, they may be packed away in a sheltered place out-of-doors till they are required for forcing. It takes at this season from six to seven weeks to obtain blanched shoots.

Asparagus.—Asparagus roots may be forced in heated brick pits, or on hotbeds made up chiefly of Oak or Beech leaves to which stable-dung may be added, to ensure readier fermentation. Greater care is necessary with fermenting material than with hot-water heating, and those who have made a trial of both methods mostly prefer hot-water heating. What has to be avoided with leaves, &c., is the rapid rise of the warmth in mild weather, and its fall in cold; though this holds good of water-heated forcing-pits if care be not exercised, and the plunging thermometer in daily use. The soil in which the roots are to be planted should come up to within 8 inches of the glass, and when the roots are planted, not more than 12 inches will exist between the bed and the glass. The roots should be put close together, and covered with 6 inches layer of soil. At the finish, afford water if the soil be dry. Put on the sashes, and start with a steady top-heat of 50°, increasing it in a week or ten days to 60°, and afterwards to 65°. The bottom-heat should not exceed 75°.

Rhubarb.—Place more crowns in heat, and make sure that the first batch of roots is not suffering from dryness; and, if necessary, afford water at a temperature of 70°.

Tomatos.—Any fruits taken from out-of-door plants, and that have been ripened on shelves in a hothouse, may now be put into the fruit-room, or other cool place, till consumed.

Horse-radish.—The entire crop may be lifted this month, and a new plantation made, reserving the largest and best roots for use, laying them closely together in an out-of-doors border, under a slight covering of straw, so as to be easy of access in any weather.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorset.

Heat and Ventilation.—There are few matters connected with Orchid-culture that require greater care than the management of the heating-apparatus, and the ventilation of the houses during the winter months. For several months to come we shall have to depend entirely upon the heating-apparatus for the necessary warmth in the houses, so that heedless and improper stoking may become a source of constant anxiety and trouble. Excessive fire-heat is a frequent cause of deterioration in Orchids, therefore no more heat should be employed than is absolutely necessary. It is a great mistake and a waste of fuel to make up large fires in the early morning. The pipes then become hot, just when the outside temperature is advancing, and a dry and unpleasant atmosphere is produced in the houses, whilst the furnaces, being full of fire, are practically unmanageable. It is much better and more economical to raise the temperature by small sharp fires, and when the sun is felt warm in the houses, the fires being small, the fire-heat can quickly be reduced. Should there be insufficient heating-apparatus, and the proper temperatures cannot be maintained without making the pipes unduly hot, more heating surface should be provided during the present mild weather. During winter fresh air is quite as essential to Orchids as at any other time, even when there is only an hour or two of fine weather during the day, so that the opportunity of affording air should not be neglected. In mild weather plenty of air may with safety be admitted through the bottom ventilators, the top ventilators of the house should be opened slightly, there being less danger of the plants getting chilled. When very cold north or east winds prevail, it is best to keep the top lights closed, and to regulate the temperatures wholly by means of the lower ventilators, open those on the lee, or opposite side to the wind.

Shading.—All shadings should now be removed from houses having a north aspect and side lights, but houses facing south which contain such plants as Phalenopsis, Cyripediums, Angræcums, Vandas, Bolleas, Pescatoreas, Bulbophyllums, Cirrhopetalums, and the cool Orchids, must still be shaded during clear sunshine. A few sheets of tissue-paper will answer the purpose in many cases.

Plants in Flower.—As the pseudo-bulbs of the deciduous Calanthes are now fully grown, and the bloom-spikes are pushing up, a moderate amount of water must be afforded till all the flowers are expanded, when it may be gradually withheld. When the plants open their flowers, put them together in one part of the house where it is possible to keep their immediate surroundings somewhat dry. Numerous plants of Cattleya labiata are now in bloom, and the importance of removing the spikes and sheaths as soon as the flowers fade, should not be overlooked. After flowering, the plants should be arranged in a cool light position in the Cattleya-house, where air will circulate freely around them. When at rest much care is needed in affording water at the root. If the potting materials be kept constantly moist, it will cause the pseudo-bulbs to turn black and decay. Repotting or resurfacing may be done as soon as new roots are observed from the last made growths. Plants that have made their full complement of roots whilst in bloom, should be repotted in spring. Cattleya Gaskelliana is also rooting freely, and should be placed alongside the C. labiata, but do not repot them. Lælia Perrini, its variety alba, and the rare L. P. leucophæa when finished flowering will require a long rest, with but little root-moisture.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Pine-apples: Successions.—The growth of successional plants should be at this date completed for the season—the pine-pots will be filled with healthy roots, and the plants approaching full size; and to maintain them in this condition should be the sole aim of the gardener till the resting-season is passed. With this end in view, keep them rather dry at the roots, once a fortnight being as often as it is necessary to make an examination as to their condition as regards moisture in the soil. When it is apparent that water has become necessary, let enough be afforded in a tepid condition to moisten the entire mass. The temperature of the succession-house should range from 60° at night to 65° by day, with fire-heat alone, but with sun-heat 70° to 80°. The house must be damped down at least twice a day, and if much fire-heat is used, more frequently. Do not let the water touch the hot-water pipes when these are very warm, as it simply goes off in the form of vapour, which condenses on the glass and rafters, and forms dangerous drip. Let the house be ventilated in mild weather by opening the upper ventilators. Should the tan have contracted, and left the sides of the pots, press it closely around them, adding a little more fresh tan, so as to raise it to the height of the pots. This addition should not, however, be made if it is calculated to raise the bottom-heat, which should remain at 80°.

Suckers.—Those suckers which were potted in early September may be afforded a slight increase of top-heat, and be treated in all respects the same as the successions.

Fruiters.—In order to assist these, the bottom-heat may be increased a few degrees (90°), and the atmospheric moisture also; and close attention must be paid to their other requirements. Let no water be afforded any plant after the first trace of ripening is observed on the fruit. Such winter-fruiters as Smooth Cayenne, Black Jamaica, and Charlotte Rothschild, which are less prolific of suckers, should have their leaves shortened after the fruit is removed, so as to force the production of suckers; and if these come in some numbers, thin them out to two or three. The glass of all Pine-stoves should be clean and bright during the winter. Where tree-leaves are used for making hot-beds, the bulk of the Oak, Beech, and Chestnut should be got together under cover this month.

Winter Cucumbers.—The winter is not favourable to strong growth in Cucumber-plants, and everything possible should be done that will impart vigour to them. The stopping of the main shoots should be suspended, and strong young shoots trained in, but without crowding them; very weak ones, and the older leaves being removed. If the last top-dressing has become filled with roots, do not afford another; but add a little soil at the margin of the bed or hillock of soil, if there be space for it. Afford tepid-water when necessary, syringe the plants once a day in fine weather, and maintain moist, growing conditions. Let the temperatures range from 65° at night, to 70° by day with fire-heat, and 80° with sun-heat. Remove deformed fruits, and reduce the number of those left for consumption, so as not to over-tax the strength of the plants.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 14	National Chrysanthemum Society's Floral Committee meeting.
TUESDAY,	Nov. 15	Ulster Horticultural Society's Chrysanthemum Show at Belfast (2 days). Brighton and Sussex Horticultural Society's Chrysanthemum Show (2 days).
WEDNESDAY,	Nov. 16	Ancient Society of York Florists' Chrysanthemum Show (3 days). Buxton Chrysanthemum Show. Bristol Chrysanthemum Show (2 days). Hull Chrysanthemum Show (2 days). Ayrshire Horticultural and Agricultural Society's Winter Show at Ayr.
THURSDAY,	Nov. 17	Scottish Horticultural Society's Chrysanthemum Show, in Waverley Market, Edinburgh (3 days). Royal Botanical and Horticultural Society of Manchester Chrysanthemum Show, in St. James' Hall (3 days).
FRIDAY,	Nov. 18	Stockport Chrysanthemum Show (2 days).

SALES.

MONDAY,	Nov. 14	Dutch Bulbs, at Protheroe & Morris' Rooms. Unreserved Clearance Sale of Nursery Stock and Fruit Trees, at the Rutland Park Nurseries, Perry Hill, Catford, by order of Messrs. John Laing & Sons, by Protheroe & Morris (2 days).
TUESDAY,	Nov. 15	Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs at Protheroe & Morris' Rooms. Great Sale of Japanese Lilies and Palm Seeds, at Protheroe & Morris' Rooms.
WEDNESDAY,	Nov. 16	Unreserved Sale of Nursery Stock at the Shorthlands Nursery, Shortlands, by order of Mr. J. B. Bryant, by Protheroe & Morris.
THURSDAY,	Nov. 17	Dutch Bulbs at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 18	Dutch Bulbs at Protheroe & Morris' Rooms. Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—42° 1'.

ACTUAL TEMPERATURES:—

LONDON.—November 9 (6 P.M.): Max., 60°; Min., 49°.
PROVINCES.—November 9 (6 P.M.): Max., 57°, Scilly;
Min., 44°, Aberdeen.
Dull, foggy, slight rain.

The Modern
Chrysanthemum.

IN this time of Chrysanthemum Carnival it may not be inopportune to draw attention to some points that are well known, though in general little thought of. Neither gardeners nor the general public adequately realise what an artificial product the exhibition Chrysanthemum really is. Our herbaria contain no evidence of the existence of such forms in Nature. Search the fields of Japan or China, and no such flower will be found. They are the issue not only of ordinary processes of cultivation on the part of the Oriental gardeners, but of special procedures of selection and suppression resulting in what is really a triumph of the gardeners' art. Our own cultivators have but copied and repeated the methods of the Japanese, and, so far as we know, have not devised any new method of procedure.

Like most other plants the Chrysanthemum, left to itself produces many more buds than it can bring to perfection. From the first, then, there is a struggle for existence, the weak or the ill-placed ones succumb; the strong ones, or those placed under more favourable conditions, survive and flourish. The result may be seen in an unpruned Chrysanthemum. The buds which have survived the natural suppression, develop into flowers tolerably uniform in size and colour. As a rule, no one is much greater or much more developed than another. The effect is beautiful: there is a proper balance between the foliage and the flowers; the number of blooms is considerable, though their size is as nothing compared to that of the exhibition specimens. The plant is grown naturally with the assistance indeed of art; but art is not called into play to thwart the natural mode of growth, but to foster and promote it.

With the huge exhibition-flowers the case is different. A particular bud is "taken"—that is, it is selected, and its rivals and competitors are suppressed. Sometimes it is a "crown-bud" that is taken, sometimes a "terminal bud," to use the phraseology of the growers, which in this matter is the opposite in point of significance to that employed by botanists. This selection of particular buds, which are not the same in different varieties, is very interesting. We earnestly hope that cultivators will not lose the opportunity of recording their observations as to the particular varieties that are best grown on from crown-buds or from terminal buds respectively. Perhaps in time we may get at "the reason why." If so, we may be sure that the knowledge will not only be of importance to the naturalist, but that it will possess special practical value, and obviate much guess-work and hap-hazard procedure. In the meantime, we note with interest the central fact that the buds which look so much alike have nevertheless different attributes. We speak of some things as being as like as peas in a pod, but when we come to look at the peas carefully, we find that the degree of resemblance between them is much less than a superficial glance reveals. They differ, of course, in position, those at the two ends of the pod are usually smaller, and have less room to expand. The supply of nourishment to them must be different in amount from that received by the peas in the centre, the processes of fertilisation may also well present some modifications, according to the position of the ovules; and so it happens, as all raisers know, that instead of being very much alike, the peas in a pod are often very different.

It is the same with the buds, whether of the Chrysanthemum or other plant. The buds on different parts of the plant are not all alike. Very often they are considerably different. The advantage to the plant of this diversity is obvious. A check during the growth of one set of buds is compensated for by the development of others. The variety in form and endowment goes to neutralise the excessive levelling down that occurs from the internecine struggles of competitors. The Chrysanthemum-grower, as we have said, avails himself of this diversity; he "takes" the bud he deems best for his purpose, and suppresses the rest. The result in a botanical sense is a monstrosity; but this term has, in ordinary language, an evil significance which the enthusiastic Chrysanthemum-grower would naturally resent, and the general public would endorse their view of the case. There is, happily, no anti-vivisection

society, no society for the prevention of cruelty to plants, and so the enthusiasts may continue their mutilations and suppressions without fear of police inquisition.

The modern Chrysanthemum is, as we have said, a work of art, and from that point of view it is also a triumph. *Floreat!*

LINNEAN SOCIETY.—An evening meeting will be held on Thursday, November 17, at 8 P.M., when the following papers will be read:—1, "On some Spiders from Chili and Peru," by F. O. PICKARD, Cambridge; 2, "The Botanical Results of a Journey into the Interior of Western Australia," by Mr. SPENCER MOORE, F.L.S.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are asked to state that the Committee have been obliged to remove the offices of the above Institution from 50, Parliament Street, to 175, Victoria Street, S.W., to which address, in future, all communications should be sent.

"THE KEW BULLETIN."—The Bulletin of Miscellaneous Information from the Royal Gardens, Kew, for November, contains Dr. A. Henry's very interesting and important Budget from Yunnan (continued); Notes on Insect Powders as made from Chrysanthemum roseum and *C. cinerariæ-folium*; Diagnoses Africanæ, XII.; an obituary notice of Dr. J. E. T. Aitchison; a note on the coloured drawings of Burmese Orchids made by the late Rev. C. L. P. Parish, and presented by his widow to Kew; and other items of interest.

M. MARCHAND, if he were not a naval officer, says the *Daily News*, might have been an eminent gardener. Wherever he planted the French flag, he planted a garden, and sowed edible vegetables. His Radishes, it appears, were a great success; so were his Cucumbers, Pumpkins, Lettuces, Spinach, and Sweet Potatoes. Vegetables almost sprang up in the course of a night in the Bahr-el-Ghazal; and at Fashoda, as is known, he was able to send a well-filled hamper from his garden to the Sirdar.

"BOTANICAL MAGAZINE."—The plants figured in the November number are *Astragalus ponticus*, Pallas, t. 7622, an erect villous herb, with narrow multijugate pinnate leaves, and close axillary heads of yellow papilionaceous flowers. It is a native of Asia Minor.

Kniphofia longicollis, Leichtlin (ex Baker, in *Gard. Chron.*, 1893, xiii., p. 682). This is like *K. aloides*, but has bright yellow flowers, without a tinge of red. It is a native of Natal, and flowered in the garden of W. E. Gumbleton, Esq., Queenstown.

Aloe leptophylla, N. E. Brown, t. 7624.—A fine-looking Aloe, with spotted leaves, coarsely and remotely toothed; flowers numerous, pendulous, in close umbels at the top of the spathe, each flower about 1½ inch long, orange-yellow tipped with green. Native of Cape Colony.

Podotheca chrysantha, Benth., t. 7625.—A straggling Composite herb, with scaberulous stems sessile, broadly linear leaves and terminal flower-heads, each about 1 to 1½ inch across; flowers yellow, with a long, slender, curved tube, and a regularly five-lobed limb. It is a native of Western Australia.

Calliandra fulgens, Hooker, t. 7626.—A Mexican shrub, with pilose, pari-pinnate leaves; pinnæ six, sub-sessile, lanceolate; flowers crimson, in heads. It is a Composite belonging to the tribe Ingeæ.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—The floral committee on the occasion of the meeting on October 12, 1898, awarded First class Certificates to Mr. T. E. Houtvester, of Utrecht, for Chrysanthemum President Nonin and Soleil d'Octobre; to Messrs. E. H. Krelage & Son, of Haarlem, for Cactus-Dahlia Hohenzollern, C.-D. Mary Service, C.-D. Mrs. Dickson, C.-D. True friend; to Mr. Egbert Kloosterhuis, of Veendam, for Populus trichocarpa, Pirus erythrocarya, Stephanandra Tanakae, Ulmus argentea albo-marginata; to Mr. C. Meynen, of Groningen, for Vriesea hybr. retroflexa ×

brachystachys. Certificates of Merit were also awarded to Messrs. E. H. Krelage & Son, of Haarlem, for Cactus-Dahlia Aegir, C.-D. Falka, C.-D. Island Queen, C.-D. Maid of Honour, C.-D. Mrs. John Goddard; to Mr. H. D. Willink van Collen, of Breukelen, for Iochroma Warscewiczii. A Gilt Medal was presented to Mr. J. Th. van den Berg, Jr., of Jutfaas, for a collection of cut flowers from Begonia tuberosa erecta gigantiflora duplex; and a Silver Medal to Mr. Joh. Wolfswinkel, of Enschede, for a collection of cut-flowers of Chrysanthemum.

HYACINTH GLASSES.—We read in the German gardening journals of an invention sold by the Gebrüder Streit's successor, which is a Hyacinth glass provided with a means, probably in the form of a spout or nozzle, by which the glass can be emptied or filled with water, without in any way disturbing the bulb.

VEITCH'S PROLIFIC STRAWBERRY.—This fine Strawberry, it will be remembered, is the result of a cross between Empress of India and British Queen, and was figured in our columns July 30, 1898. It is recorded in the current number of the *Revue Horticole* that a Strawberry having an "astonishing resemblance" to Veitch's Prolific in all particulars has been raised as a cross from Dr. Morère by General Chanzy.

M. PATRY, the head gardener of the Jardin d'Acclimation in Paris, a very clever cultivator, has resigned his situation; and is succeeded by M. PERROT, hitherto head gardener at the Botanical Gardens, Marseilles.

THE HOLY LAND.—Mr. J. GILBERT BAKER, F.R.S., has consented to give a lecture on "The Botany and Physical Geography of the Holy Land," at the Westminster Meeting House, 52, St. Martin's Lane, London, on Third-day, the 22nd of Eleventh Month, 1898, at 7 o'clock. The chair will be taken by ALFRED WILLIAM BENNETT, M.A.

CORNISH DAFFODILS.—The *Cornish Magazine* for November opens with an illustrated paper by the Rev. GEO. ENGLEHEART on "The Daffodil in Cornwall." This county seems to rival the Scilly Isles in the Narcissus industry, soil and climate being both favourable for the purpose. Small growers have, probably, but little idea of the scale upon which Narcissus culture is carried out in certain localities specially devoted to the industry. Says Mr. ENGLEHEART: "For magnificence of these plants grown to perfection on a large scale, I have seen nothing to equal Mr. ANDREW LAWRY'S flower-farm in Mount's Bay. The view of acre upon acre of the silver Poeticus ornatus and the great waxen clusters of Grand Monarque, stretching under the brilliant blue sky of Cornwall far away towards the blue bay and the ancient mount of St. Michael, upstanding in the sunlight, would need the idyllic gift of a THEOCRITUS to describe worthily." From a purely economic point of view, Daffodil-culture is advancing in two directions—there is the ever-increasing quantity raised for the wholesale markets, and the "improved" and fancy varieties which tempt the money from pockets of specialists. It is evident that if the British farmer cannot grow Wheat profitably, there yet remain divers branches of agriculture or horticulture at which he has a chance of success, if he will strive to adapt himself to circumstances instead of allowing himself to be beaten by them.

RAINFALL AT ULLSWATER.—A correspondent writes that about 6 P.M. on November 1 a storm broke over Ullswater, and continued till 4 A.M. on November 3, during which time over 2½ inches of rain fell, which is the largest amount registered here for many years. The Ullswater lake rose about 4½ feet in the same time.

GARDENERS' ORPHAN FUND BAZAAR.—We are informed by circular that it is the intention of Mr. M. TODD, the president of the R.S.H.A., to hold, during the continuance of the Chrysanthemum Show on November 17, and the two following days, in the Waverley Market, Edinburgh, a stall under the

gallery at the west end of the market for the sale of plants, flowers, &c., for the benefit of the Gardeners' Orphan Fund. He offers likewise a number of valuable and attractive objects to be disposed of by subscription sale. Tickets are sixpence each. The drawing is to take place on Saturday evening at the close of the show.

STOCKTAKING: OCTOBER.—Notwithstanding all the rumours of war, and the naval and military preparations at home and elsewhere in the Empire, the Trade and Navigation Returns for the past month are, as things go, satisfactory, though the value of the imports have fallen, as compared with the same period last year, by over £440,000. The items in which a decrease is recorded, are living animals, for food; metals, chemicals, &c.; oils, raw materials for textile manufacture, manufactured articles, and miscellaneous articles. The total for October last year was £39,044,763; for last month £38,601,673. The following is our usual excerpt from the summary table:—

IMPORTS.	1897.	1898.	Difference.
	£	£	£
Total value ...	39,044,763	38,601,673	—443,090
(A.) Articles of food and drink—duty free ...	13,032,059	13,572,295	+540,236
(B.) Articles of food and drink—dutiable ...	3,166,814	3,182,481	+15,667
Raw materials for textile manufactures ...	4,517,481	3,729,088	—788,393
Raw materials for sundry industries and manufactures ...	5,241,185	5,445,353	+204,168
(A.) Miscellaneous articles ...	1,244,130	1,179,478	—64,652
(B.) Parcel Post ...	86,160	110,556	+24,396

We may note that Hops from the United States and elsewhere found their way here to the amount of £66,541, Clover and grass seed figured for £33,988, Rape was imported to the value of £51,467, pulp of wood was sent in to the value of £154,173, wood and timber foot up at £533,897, and we imported dried Currants and Raisins to the total value of £695,751, about equally divided between the two. And this naturally leads up to our usual table relating to fruits, roots, and vegetables, as follows:—

IMPORTS.	1897.	1898.	Difference.
Fruits, raw:—			
Apples ... bush.	457,447	634,027	+236,580
Cherries ... "	...	...	...
Grapes ... "	360,151	346,049	—14,102
Pears ... "	107,523	103,217	—4,308
Plums ... "	29,289	93,307	+64,018
Unenumerated ... "	119,816	203,177	+83,361
Onions ... "	710,701	748,348	+37,647
Potatoes ... cwt.	325,253	105,112	—220,141
Vegetables, raw, unenumerated ... value	£77,297	£119,373	+£42,076

It need scarcely be again observed that to those interested in the disposal of home produce, these figures are of great importance.

EXPORTS.

Other people besides ourselves engage in stock-taking. The Government Labour Department does this, and enumerated the other day the time lost in the various strikes, by which, since the beginning of the year, several millions of days have been lost. Last year it was the engineers who had the *pas*, this year the Welsh coal-getters have the greatest number of days lost placed to their "credit." Exports might have looked up much better to-day than they have done, but the returns show an increase of £579,967. The figures for October last are £19,863,019, against £19,283,052 for the same period in last year. The ten months just ended show a total of £192,592,177, against £195,274,228 in October, 1897. The items of increase are to be found under the headings of raw materials, £259,964; yarns and textile fabrics, £415,147; machinery and millwork, £504,323; the

largest decrease is in metals and articles manufactured therefrom, except machinery; articles of food and drink, and apparel and articles of personal use. It is interesting to note an export of butter, amounting to £4,983; of cheese, £4,742; sugar, refined and candy, sent from us to the value of £37,040. We are not sure that any great strike threatens; should things remain quiet in this direction, the deficit in exports may be set square by December 31.

PUBLICATIONS RECEIVED.—*Commerce* (Amberley House, Norfolk Street), Oct. 26.—*Newspaper Owner and Manager* (Electric Publishing Co., Woodgrange House, Forest Gate, E.), Nov. 2.—*Agricultural Economist* (Agar Street, Strand). This includes an article on "Blackberry Growing," as a "new" home industry; and one on "Succulent Plants," which is well illustrated.—*Agricultural Returns for 1898* (Board of Agriculture). Statistical tables, showing acreage under crops and grass, and number of horses, cattle, sheep, and pigs in the United Kingdom, with particulars for each county of Great Britain.—*Thirtieth Annual Report (for 1897) of the Flax Supply Association for the Improvement of the Culture of Flax in Ireland*. The season of 1897 was a very unfavourable one for Flax, owing to the prevalence of cold and wet weather. Another cause of failure was the want of judgment and care shown by many of the farmers.—*Nature Notes*, November.—*Bulletins of the Botanical Department, Jamaica*, May, June, July, and August, containing papers on Vine and Vine Culture, India-rubber, Insects in Cigars and in Grains and Peas, Bermuda Onions in Antigua, Synoptical List of Ferns, Diseases of Citrus Fruits, and (in the August number) Soil Inoculation and Tamarinds.—*Bulletin of Miscellaneous Information, Trinidad*, October, with papers and extracts on Vanilla, Preserving Lemons, and Cacao v. Chocolate.—*Agricultural Gazette of New South Wales*, August, contains articles on Tobacco Growing in New South Wales, Weight per Bushel of Australian Wheats, New Varieties of Sugar-cane at the Richmond River Farm, and Orchard, Vegetable, and Flower Notes.—*Manual of the Grasses of New South Wales*, by J. H. MAIDEN. The contents include chapters on the cultivation of Native Grasses, the conservation of Native Grasses, analyses of Grasses, Grasses for Special Purposes and Situations, Key to the Genera, List of Grasses, Descriptive Account of each Grass. The excellent illustrations are worthy of the text.—*Handbook of Insects Injurious to Orchard and Bush Fruits, with Means of Prevention and Remedy*, by Eleanor A. Ormerod (London: Simpkin Marshall, Hamilton, Kent & Co.).—*An Elementary Text-Book of Botany*, by Sydney H. Vines, D.Sc. (London: Swan, Sonnenschein & Co.).

HOME CORRESPONDENCE.

SPRAYING FRUIT-TREES.—On reading of the Canadian fruit-tree spraying experiments on p. 300 in the issue of the *Gardeners' Chronicle* for October 22, I find that the spraying-mixture was very similar to that which I made use of last winter and spring. This consisted of 3 oz. Paris Green, 2 lb. lime, 2 lb. sulphate of copper, and 40 gal. of water. This is a safe and effective receipt, and our trees are only sprayed with it twice, once before the flowers opened, and once after the fruit was set; but I had them sprayed twice later in the season with Bentley's quassia extract, which is, of course, non-poisonous to anything but insects; and I may add that our crop of Apples was very large in quantity, although owing to the drought some of them were very small. As serving to show the efficacy and necessity of spraying fruit-trees, we have two fair-sized trees of Blenheim Orange Pippin; one is in a paddock in which the garden-horse feeds, which, of course, was not sprayed, and, in consequence, bore no fruits; and the other was a few yards distant, an iron fence dividing them, was sprayed, and it produced a fair crop of good fruits. R. M., Newbury.

HEDGES OF GARDEN FLOWERS.—Some few years since, after planting out our usual quantity of Cactus and single Dahlias, I had a number of strong plants left over, and these I decided to plant in a

line round one of the kitchen garden quarters, which visitors have to pass on their way to the plant-houses. Not having any stakes on hand to stake them separately, they were secured to tall stout Pea-sticks, putting these on each side of the plants, just the same as Peas are supported. Dahlias were planted at about 6 feet apart in mixtures of the colours, still most of the available stock of the Cactus varieties were of the *D. Mariesii* type, a strong grower. Some tufts of Sweet Peas, Canary Creeper, tall-growing Tropæolums, and Convolvulus major were planted between the Dahlias, and by the end of the month of August the hedge presented a mass of flowers, and the Pea-sticks completely hidden from view. This hedge was much admired by those who saw it, and since that year I have always had a flower-hedge in some form or other, the planting being varied more or less each year. To-day several armfuls of Cactus Dahlias could be gathered from this year's hedge, as owing to the fine dry weather and absence of frosts, the plants are flowering later than usual. *H. J. C., Grimston, Tadcaster.*

HARDINESS OF SELAGINELLA DENTICULATA.—

On a sheltered grassy bank in the grounds at Grimston Park, there is to be found a large batch of the above plant, which has existed there for several years, and during that time has been exposed to some severe frosts. The bank is shaded by a large Wych Elm, and the position is, moreover, sheltered from the north blast by a large belt of forest trees. The soil is a stiff loam, and overlies the limestone rock. It is about seven years since my attention was drawn to it, when the workmen were raking up tree-leaves in February. I find it extends somewhat each year, and now forms quite a carpet of several square yards. In the conservatory at Grimston Park there are narrow boxes filled with this Selaginella to serve as margins to the groups of flowering and foliage plants on each side the central path, these boxes being annually replanted. My idea is, that the refuse soil has at some time been taken from the compost-heap and spread all out where the patch is now found. *H. J. C., Grimston Park Gardens, Tadcaster.*

THE PEAR MIDGE (DIPLOSI PYRIVORA).—

There is an interesting article on this insect in the last issue of the *Journal of the Board of Agriculture*, in which we find it stated that this insect was first described by Schmidberger in 1831 under the name of *Cecidomyia nigra*, and the digging of the ground under the infested trees, 4 inches deep, during the summer; also the application of kainit from the middle to the end of June, at the rate of 1 ton per acre, are recommended as remedial measures. There is little doubt as to the destructiveness of this insect, or that it is difficult to combat. I have searched the trees at Belvoir and elsewhere many times when in flower, and tried to entrap them, but have as yet never seen one, although the larvae are plentiful, and many of the trees here have lost almost every fruit. The article mentioned gives April 12 to 18 as the time at which egg-laying has been observed. It will repay the fruit-grower the time spent in studying it, and various other interesting papers in this number, including, as it does, articles on the "Strawberry Mildew," "Fungi on Tomatos," "Aphides," &c. *W. H. Divers.*

CROCUS SPECIOSUS.—One seldom finds this beautiful species in gardens, and rarely at its best. Mr. G. Nicholson describes it as "probably the handsomest autumn-flowering Crocus," and he is right. It appears to do well in any position, for I have it on a north aspect, where sunlight does not fall, and the plants bloom finely; but I get the best blooms from clumps under a west wall. The clumps have been there for years, they never fail to flower, and the clumps increase in size by the natural production of offsets. It should not be planted among plants which crowd it, as then the flower-stems are weak, and tall, and unable to bear the weight of the flowers. As in October, when the flowers are at their best, north winds are always experienced, protection of some kind should be afforded, such, for example, as a few sprays of Thuia, or other evergreen shrub. By placing a bell-glass over the buds just as they are showing colour, the flowers so protected come very fine indeed. The best time to lift and plant the corms is early summer. In planting, a hole 6 inches or a little more in depth should be made, and 2 to 3 inches of well-decayed manure put at the bottom of it; on this a layer of rich soil, and then the corms, filling up the hole with the ordinary soil, and pressing all firmly down. Established clumps are treated to a surface-dressing of guano. *R. D.*

TOMATOS AS A FARM CROP FOR SCOTLAND.—Hardly can this be possible or profitable until one of several things has happened. Our climate must be ameliorated, our Tomatos made hardier, the season between set and perfect maturity shortened, our farms sheltered in all directions with walls or boardings, covered with glass, and warmed more or less with artificial heat. With all our modern improvements in the colour, size, and flavour of Tomatos, their constitution, so far as it affects the measure of cold they can endure, remains exactly the same. This seems a fixed and stable quantity so far as it affects Tomatos, Potatos, Dahlias; neither will endure more or less cold than on the morrow after their introduction. Neither have we made much or any progress in shortening the period of production between the start and the finish of crops of Tomatos. Through the modern process of growing Potato sets as seed, we have shortened the period of production of this vitally important crop by a month or six weeks; or, which is very much the same thing, and even more convenient, we force them to do a spell of a month or more's work out of the ground. Something may be done also to curtail the work of Tomatos in the open air. But that can only be through the aid of artificial heat, additional shelter, &c.; selection of early varieties, the use of raised and dry borders, careful feeding, loosening the roots, &c., as suggested by your correspondent Mr. Brotherston. But over the greater part of Scotland there is little hope of the Tomato paying as a farm crop, unless the produce is converted into pickles in a green or immature condition. In warm, sheltered gardens, genial climates, or on walls, Tomatos may be grown large enough to colour and finish for eating and sauce by being cut before the frost, and suspended in warm kitchens or dry vineries with ripe Grapes until they ripen, which may be a month or six weeks after their removal from the plant; or better still, the plants are suspended with the unripe Tomatos on them. *D. T. P.*

APHIS ON BEECH-TREES.—Your advice to your correspondent as to aphides on Beech is not very good; a bushel of foot and lime-water mixed, and a big whitewash-brush are more to the purpose. Even a large tree can pretty well be cleared of the insects if a man gets up a ladder and carefully whitewashes the branches. The stem of the tree must be well washed down to the top of the roots, as the aphides goes under the soil, and hibernates on the top of the roots. I have tried this, and I know it succeeds. *J. S. Levett.*

—I notice one of your correspondents is enquiring about this; perhaps the following particulars will be useful to him. A very fine Beech-tree was attacked with this insect while I was at Ketton, and in the course of two or three seasons the main stem was thickly covered with the downy insects; the leaves got very sickly in appearance, and grew worse year by year, and I was sure that the tree would die if the insects were not killed. A workman was provided with a mixture of 6 oz. soft soap, and 1 oz. common brown carbolic acid in one gallon of water, and with this solution the bark was scrubbed. The time taken to scrub the tree was from two to three days, but it saved the tree, which was alive a few weeks since. This insect never leaves a Beech-tree when once it settles on the bark, and unless effective measures are taken against it, the tree is sure to die. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

EUCALYPTUS GLOBULUS IN CORNWALL.—I do not think this Eucalyptus is as rare, or as difficult to grow in England, as the paragraph (p. 322) would seem to suggest. In the extreme west of Wales I have seen several, all apparently doing well. One may be seen at Goodwick (Fishguard Bay) in Pembroke-shire, growing in a rather elevated and exposed position, though partly sheltered by a house on one side. Another one may be seen at Treffgarne. *T. H. D.*

TAPEINANTHUS HUMILIS.—I observe mention is made on p. 333, of *Tapeinanthus humilis* (Herbert), syn. *Carregnoa dubia* (Boissier), as a variety almost unknown in cultivation. I may remark that the difficulty of supplying its requirements in English gardens is the chief cause of its rarity, and Professor M. Foster, at Shelford, commands a combination of skill and favourable conditions rarely met with. The bulb is abundant near Gibraltar, I believe, on the same low ground which is frequented by *Narcissus vividiflorus*. A few years ago, one of my sons, when quartered at Gibraltar, sent me more than once an abundant supply of both these bulbs, which I distributed amongst those whom I thought most

likely to succeed in their cultivation, but I am afraid very few succeeded. I have tried every resource I know of, but in a year or two both these species seem to lose all distinction of season, and die out; but *N. bulbocodium* var. *monophyllum* I can do very well in a greenhouse, renewing it frequently from home-saved seed. *C. Wolley Dod, Edge Hall, Malpas.*

YOUNG GARDENERS AND THE R.H.S. EXAMINATIONS.—At the close of a recent lecture given to the members of the Mutual Improvement Society at Chiswick, members, and especially the younger ones, were strongly urged to prepare for and enter next examination, which takes place in April, 1899. It was specially urged that Chiswick, the gardens of the Society, should, of all places, furnish a good contingent of candidates. A young gardener, in the course of the discussion which ensued, and he with some others who spoke showed that they possessed intelligence and good theoretical knowledge, said one great reason why young gardeners did not enter as candidates was that they were to some extent, under the existing arrangements, placed in competition with students from colleges and laboratories who enjoyed ample training in the more highly regarded accomplishments of note-taking, and literary style in composition—accomplishments in which the average young gardener had no instruction or training. Hence, when they sat down for an examination, the college or laboratory-trained candidate, though, perhaps, less grounded in practical knowledge, obtained the highest number of marks because of his greater literary accomplishments. Thus, said he, in such an examination, young men who really have superior gardening knowledge, have to occupy a lower position in the lists than have those trained at institutions. There is no doubt but that this objection is a sound one, and can only be met by placing professionally-trained candidates into a diverse class and examination than ordinary gardeners are. *A. D.* [In such a case as this, examiners would attach relatively little importance to literary composition. *Ed.*]

AMARYLLIS BELLADONNA VAR. KEWENSIS.—

Referring to Mr. Thomson's query in your last issue:—The bulb of my example of this variety is more than twice as large as that of the type. There is also a difference in the tunic, that of the variety being smooth, brittle, shining, comparatively unbroken, and much less woolly than that of *A. Belladonna*. There is no difference in the shape of the respective bulbs. *G. B. M.*

WIRED AND CUPPED BLOOMS.—I should like once again to enter a protest against the presentation of flowers for awards or certificates, except in such a condition that their true form may be judged. In a very large number of cases Chrysanthemum blossoms are exhibited for the purpose of obtaining Awards of Merit, or other recognition, with their blossoms so firmly fixed into wire rings or tin cups that they cannot be withdrawn, and in such a fashion that the whole of the under-petals are forced upwards, so as to alter materially the outline of the flower, and render it impossible for the judges to determine whether it is loosely made or compact. A flower with drooping, loose petals, and one with normally stiff ones, giving it a flat character, are, when so treated, quite undistinguishable, and as such features are very material matters of taste, my contention is, that no support whatever should be permitted, that the presence of anything of the sort should, *per se*, disqualify the flower, which should be presented before the judges entirely on its individual merits of form, as well as tint, and general make. I am perfectly aware that for exhibition purposes, stands and other apparatus may be absolutely requisite—these lie outside my argument; nor have I anything to say against the dressing or careful arrangement of petal, since the disturbing factors of travel and packing may necessitate them; but what I do contend for is an unsophisticated flower as regards props and wires when it is brought to the judges' table. *Chas. T. Druery, F.L.S., V.M.H.*

ENQUIRY.

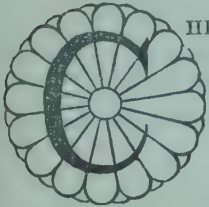
"He that questioneth much shall learn much."—BACON.

In the cathedral at Reims, in one of the many pieces of tapestry there displayed, is a representation of a white Lily, with a rhizome beset with branching spines. The flower is correctly represented. The legend contains the words, "u't spras." Can any reader throw light on this spiny Lily?

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

November 8, 9, and 10.



CHRYSANTHEMUM ADMIRERS have during the past week had extraordinary opportunities to see collections of cut blooms and of plants in numerous centres in the South, West, East, and Midland Counties. The greatest interest, however, has naturally been associated with the exhibition of the National Chrysanthemum Society at the Royal Aquarium, Westminster. The show was a large one, without being of a "record" character. It was better in all sections than many had expected. The Japanese varieties again claimed most attention, and were shown in a greater degree of perfection than the incurveds. F. A. BEVAN, Esq., won the 1st prize in the Holmes Memorial Cup class for Japanese blooms, and would, no doubt, have done so in the class for incurveds also, but for an oversight. The more important classes for cut blooms were again arranged in the galleries, and most of the non-competitive exhibits were on the floor.

The principal classes for cut blooms, the competitive groups of Chrysanthemum plants, and much of the fruit, were arranged in the galleries. On the ground-floor were stands from most of the Chrysanthemum nurseries, also cut bloom classes, all of the florists' classes, and part of the fruit exhibits. The authorities of the Royal Aquarium on this occasion prevented public access to the galleries until the judges there had completed their duties. This concession was of great convenience to the judges and to the representatives of the Press. The specimen plants were staged in the St. Stephen's Hall, and the vegetables were there also. Specimen plants were not exhibited largely, and we sadly missed the exhibits that have usually come from the veteran Mr. D. Donald. So far as the arrangements of a flower-show can be made convenient in a structure of the type of the Royal Aquarium, the Secretary, Mr. R. Dean, is entitled to commendation for having done his best. From the report below it will be seen that Mr. MEASE, the champion of several seasons, has not been quite so successful on this occasion. The single flowered, Pompon, reflexed, and Anemone varieties were represented, but there was very little competition in these classes, although some of the exhibits were very good.

THE BATTLE OF SOCIETIES.

There were four societies represented in the class for affiliated societies' exhibits. Each society has to stage forty-eight blooms—an equal number of Japanese and incurved flowers. The 1st prize, consisting of £10 and the Challenge Trophy, was won by the PORTSMOUTH AND DISTRICT HORTICULTURAL SOCIETY with an exhibit that represented much the same quality in either section. The blooms generally were of good quality, and commendable. The whole of the blooms were contributed by Mr. J. AGATE, nurseryman, of Havant. The 2nd prize was awarded to the BROMLEY AND DISTRICT CHRYSANTHEMUM SOCIETY, there being blooms in the stand contributed by nine of its members. The BARNET AND DISTRICT CHRYSANTHEMUM SOCIETY was 3rd, with blooms from five of its members; and there was a further exhibit from the ISLE OF THANET CHRYSANTHEMUM SOCIETY.

OPEN CLASSES.

CUT BLOOMS.—JAPANESE.

Forty-eight blooms, *distinct*.—The Holmes Memorial Challenge Cup and £10 was won by Mr. W. H. LEES, gr. to F. A. BEVAN, Esq., Trent Park, Barnet, with a collection of capital blooms. The varieties were—*Back Row*: Surpasse Amiral, Australie, Lady Ridgway, Madame Carnot (good), Vivand Morel (good in colour and size), Louise, Oceana, Mrs. W. H. LEES, Mrs. C. H. PAYNE, Elsie Teichmann, Phœbus, Madame M. Ricoud, Mons. Hoste (grand), Reine d'Angleterre, and Mrs. H. WEEKS (capital). *Second Row*: Ella Curtis, magnificent in colour; Madame R. Rivoire, Ed. Molyneux, Mrs. LEWIS (good), Madame Rosseau, C. B. Haywood, Chas. Shrimpton, Mutual Friend, Pride of Madford, N.C.S. Jubilee, Simplicity, Souvenir de Mme. E. Roette, Mrs. Palmer, J. Bidecote, Souvenir d'une Petite Amie; and M. Chenon de l'éché (the best-coloured bloom we have seen). *Front Row*: Nellie Pockett, Robt. Powell, Edith Tabor, Mrs. F. A. BEVAN, Madeline Davis, Miss D. Shea, Lady Byron, Col. Chase, Mrs. MEASE, Chas. Davis, Joseph Chamberlain, President Nonin, Chatsworth, Col. W. D. Smith, Madame G. Bruant, and a promising red and yellow seedling. 2nd in this class was Mr. FREDERICK VALLIS, Bromham Fruit Co., Ltd., Chippenham. There was a beautiful bloom of the primrose sport of Madame Carnot (Mrs. Mease) in this stand, and it was sufficient to recommend the variety to everyone who saw it; Phœbus, Swanley Giant, and Yellow Madame Carnot were represented in this collection in the best possible condition. Altogether, it was well worthy of the 2nd prize. Mr. W. MEASE, gr. to A. TATE, Esq., Downside, Leatherhead, was 3rd; and Mr. J. W. McHATTIE, gr. to the Duke of WELLINGTON, Strathfieldsaye, Hants, 4th. There were seven exhibits.

Twenty-four Blooms, *distinct*.—This class is always a popular one, but on this occasion there were as many as sixteen exhibits. The quality of the 1st prize exhibit may be imagined, therefore, as being next to perfect.

Mr. R. Kenyon, gr. to A. F. HILLS, Esq., Monkham, Woodford Green, Essex, had the honour of winning the 1st prize. He had magnificent blooms of Madame G. Bruant, Phœbus, Edith Tabor, Madame G. Henry, John Neville, Madame Desblanc, Mrs. J. W. Barks (the sport from Edith Tabor), Charles Davis, Mons. Hoste, Master H. Tucker, Mrs. W. Mease, Mrs. Weeks, Soleil d'Octobre, Mrs. T. Carrington, the rest being of quality but little inferior to these. The 2nd prize was obtained by Mr. W. MEASE. He had grand blooms of Mrs. J. Lewis, Surpasse Amiral, Mrs. W. Mease, Ed. Molyneux, and others. Mr. H. Perkins, gr. to the Hon. W. F. D. SMITH, M.P., Greenlands, Henley-on-Thames, was 3rd; and the 4th prize was won by Mr. Jas. Brookes, gr. to W. J. NEWMAN, Esq., Totteridge Park, Herts, there being twelve unsuccessful exhibitors in this class.

Twelve blooms, *distinct*.—There was a large number of exhibits in this class, and the 1st prize was won by Mr. W. Meredith, gr. to D. P. SELLAR, Esq., Dudbrook, Brentwood. The best blooms in this stand were M. Chenon de Leché, Mons. Hoste, Mons. Pankoucke, Louise, C. B. Haywood, and Chas. Davis; Mr. F. King, gr. to A. F. PERKINS, Esq., Oak Dene, Holmwood, Surrey, was 2nd; Mr. R. Kenyon, gr. to A. F. HILLS, Esq., Woodford Green, Essex, 3rd; and Mr. H. SHOESMITH, Claremont Nursery, Woking, 4th, there being twelve exhibitors.

The best white Japanese variety shown in collections of six blooms was Madame Carnot, from Mr. NORMAN DAVIS, who, like last year, had six mammoth blooms of good quality; the same variety won 2nd and 3rd prizes, from Mr. G. Foster, gr. to H. HAMMOND-SPENCER, Esq., Glendaragh, Teignmouth; and Mr. Geo. Elder, gr. to J. W. BENSON, Esq., The Oaks, Walton-on-Hill. There were seven exhibitors.

The best yellow Japanese was Phœbus, Mr. H. SHOESMITH, of Claremont Nursery, Woking, having six capital blooms of this variety; the variety named Mrs. MEASE was awarded 2nd prize, but this is a very faint "yellow" indeed; Phœbus was again placed 3rd; Edith Tabor, well shown by Mr. W. McHATTIE, was 4th.

The best Japanese variety of any other colour than white or yellow, was Australie, from Mr. J. W. McHATTIE; next came Lady Hanham, in its best form, from Mr. W. Slogrove, gr. to Mrs. CRAWFORD, Gatton Park, Reigate; the 3rd prize was given to indifferent blooms of Vivand Morel.

The best six Japanese blooms, incurved, were from Mr. H. PERKINS; he had the new Australian incurved Japanese, John Pockett, also Australie, and President Bevan; these were his best blooms. Mr. JNO. JUSTICE, who was 2nd, had a very fine bloom of Australie, and another of Lady Byron.

Hairy Varieties.—The best collection of hairy-petalled varieties was from Mr. HENRY LOVE, High Street, Sandown, I.W.; Hairy Wonder was very good in this stand, and with Abbé Pievrie, Arthur, pure white, was the best. The 2nd and 3rd prize exhibits were not remarkable, except that in the 2nd prize exhibit were two good blooms of the new Leocade Gentils, a pale yellow hairy one, of much merit.

INCURVED BLOOMS.

Thirty-six blooms, *distinct*.—There were six collections in this rather exacting class, but the 1st prize of £10, and the Holmes Memorial Challenge Cup, was won by Mr. W. HIGGS, gr. to J. B. HANKEY, Esq., Fetcham Park, Fetcham. His varieties were—*Back Row*: Duchess of Fife, Mons. de Blanc (poor), Golden Empress (poor), Dorothy Foster, Globe d'Or, Madame Ferlat, John Lambert, Mrs. R. C. Kingston, Major Bonaffon, Robert Petfield, and Lady Isabel. *Second Row*: Empress of India, Ernest Cannell, Geo. Haig, J. Agate, Mrs. J. Eadie, Lord Alcester, Baron Hirsch, Queen of England, Mrs. R. King, C. B. Whitnall, F. W. Wilkinson, Alf. Salter. *Front Row*: D. B. Crane, Austen Cannell, Mrs. Coleman, Sir T. Lawrence, Bonnie Dundee, Miss M. A. Haggas, Violet Foster, Jeanne d'Arc, Violet Tomlin, M. P. Martignat, Madame Darier, and Princess of Wales. Generally, the blooms in the above collection were a little below average N. C. S. quality. The 2nd prize was awarded to Mr. J. H. Goodacre, gr. to the Earl of HARRINGTON, Elvaston, Derby, and Mr. W. Mease, gr. to A. TATE, Esq., Downside, Leatherhead, was 3rd.

Unfortunately, the collection of incurveds shown in the above class by Mr. LEES was disqualified owing to the varieties Mrs. Heal and Princess of Wales being shown. The fact that these two varieties have been declared by the Society to be too much alike to be included in the same stand had been overlooked. It was a pity, as Mr. LEES' blooms were decidedly the best exhibited.

Twenty-four Incurved, *distinct*.—There were fine collections in this class, and the 1st prize was won by Mr. W. HIGGS. The varieties that figured best here were Ma Perfection, Princess of Wales, Duchess of Fife, Mme. Ferlat, Jeanne d'Arc, Queen of England, and Major Bonaffon. Mr. W. Wilson, gr. to R. C. CHRISTIE, Esq., Ribsdon, Updown Hill, Bagshot, was 2nd; and Mr. T. Robinson, gr. to W. LAWRENCE, Esq., J.P., Elsfeld House, Ho llingbourne, Kent, 3rd. There were six exhibitors.

Twelve Incurved blooms.—There were eight collections shown in this class, and the 1st prize collection exhibited very commendable quality. It was shown by Mr. G. J. Hunt, gr. to PANTIA RALLI, Esq., A shstead Park, Epsom, and included the varieties Duchess of Fife, Mons. Desblanc, Ma Perfection, Globe d'Or, Golden Empress, Mrs. Dorothy Forster, Empress of India, Charles H. Curtis, John Lambert, Mr. S. Coleman, Miss M. A. Haggas, and Lord Alcester.

Mr. W. ROBINSON, Mr. J. W. McHATTIE, and Mr. W. G. ADAMS, florist, 89, Clarendon Road, Southsea, won prizes in this class in the order mentioned.

The best six incurved of one variety represented the variety Duchess of Fife in its best condition. The blooms were from Mr. G. J. HUNT. The variety C. H. Curtis from Mr. W. L. Farmer, gr. to H. P. LESCHALLAS, Esq., Higham, Windlesham, Surrey, and Miss Violet Foster, from Mr. T. ROBINSON, won 2nd and 3rd prizes respectively.

REFLEXED BLOOMS.

The best collection of twelve large-flowered reflexed blooms, not fewer than nine varieties, was shown by Mr. T. CARYER, gr. to A. G. MEISSNER, Esq., Aldenholme, Weybridge. There were no novelties in this class, but such familiar names as the various coloured Christines, Dr. Sharp, Cullenfordi, and others. 2nd, Mr. W. Robinson, gr. to the Rt. Hon. Lord LUDLOW, Heywood, Westbury.

ANEMONE LIKE BLOOMS.

The best collection of twelve blooms, distinctly large-flowered Anemones, was shown by Mr. J. JUSTICE, gr. to Right Hon. Sir R. TEMPLE, Bart., The Nash, Kempsey, Worcester. The varieties were Junon, pale lilac; Descartes, crimson (magnificent); Delaware, white with primrose cushion; Gladys Spaulding, yellow; Ernest Cannell, pink with yellow cushion; Cincinnati, pale pink, with darker cushion; Lady Temple, a red sport from Lumière d'Argent; Mrs. J. Benedict, white with lemon-coloured cushion; Lady Margaret, pure white; Mons. C. Lebosqz, buff, with orange-coloured cushion; Fleur de Marie, the old pure white variety; and E. C. Jukes, pale purple, with buff-coloured cushion. 2nd, Mr. W. Ring, gr. to JAS. WARREN, Esq., Capel House, Waltham Cross; and 3rd, Mr. Ives, gr. to E. C. JUKES, Esq., Hadley Lodge, Barnet.

The only collection of Anemone Pompons apparently was one from Mr. JNO. JUSTICE, and many of the varieties having much reflexed ray florets, they do not make much display.

There were fine collections of 24 large-flowered Anemone blooms, and Mr. W. RING, gr. to JAS. WARREN, Esq., Capel House, Waltham Cross, who was 1st, had a very pretty and commendable collection. The following varieties were conspicuous in the exhibit:—Mrs. P. R. Dunn, white; Nelson, purple; John Bunyan, yellow; Delaware, white; M. C. Lebosqz, orange buff; Lady Margaret, white; Mme. Robert Owen, white; Queen Elizabeth, white; and M. Dupanloup, purple. The blooms in the collection from Mr. W. Skeggs, gr. to A. MOSELY, Esq., West Lodge, Hadley, Barnet, who who was second, were a little smaller, but also somewhat neater: Descartes, Sir W. Raleigh, Junon, Mdle. Lawson, and Queen Elizabeth were magnificent. Mr. JNO. JUSTICE beat the others for 3rd place.

Of Japanese Anemone blooms, the best collection of twelve distinct varieties was from Mr. W. ROBINSON. The varieties W. W. Astor, white, and Seur Dorothy Souillere were very nice in this collection. The 2nd prize was won by Mr. W. SKIGGS, and the 3rd by Mr. JOHN JUSTICE.

POMPONS.

These were generally good, and the method of exhibiting them, which displays the foliage as well as the blooms, render the classes a pretty change from the show varieties. The best dozen sprays distinct, three blooms in a spray, was from Mr. T. CARYER. The following varieties were conspicuous in the stand—W. Westlake, yellow; Mdle. Elise Dordan (still the prettiest of Pompons), Black Douglas, crimson; Mdle. Martha, white; Perle des Beautés, crimson, with silver reverse; Toussaint Marzot, pale purple; Mr. Holmes, orange-red; and Pygmalion. 2nd, Mr. W. Aldridge, gr. to G. LACEY, Esq., Springfield House, Palmer's Green; and 3rd, Miss R. DEBENHAM, St. Peters, St. Albans.

SINGLE-FLOWERED VARIETIES.

As usual, the exhibits in this section illustrated the exquisite beauty of the single-flowered Chrysanthemums, and also the diversity and variety that the Chrysanthemum offers. The best collection of twelve varieties in sprays of three blooms each, was shown by Mr. W. ALDRIDGE, and a beautiful exhibit it was. The varieties were every one of them worth cultivating. They were Lady Churchill, red; Alphonse, white or pale pink; Springfield Beauty, Admiral Sir T. Symonds, yellow; Purity, white; Miss A. Mumford, yellow; the florets having red margins; Miss Brown, lilac with white centre; Ewan Cameron, white; Framfield Beauty, a real beautiful crimson rose-pink; and Oceana, white. The 2nd prize collection came from Mr. G. W. FORBES, gr. to Mme. NICOL, Regent House, Surbiton.

SPECIAL PRIZES.

The Turner Memorial Challenge Cup having been again awarded to Mr. DAVIS, Framfield, Sussex, it has now become his property. It was offered for thirty-six blooms of white, yellow and crimson Japanese Chrysanthemums, in twelve varieties, three blooms of each, to be shown on ordinary boards, with six inches of clear stem above the boards.

Mr. NORMAN DAVIS, of the Framfield Nurseries, Sussex, was 1st, staging Madame Carnot, Joseph Chamberlain, President Nonin, Mutual Friend, Phœbus, E. Molyneux, S. C. Probyn, Oceana, Dorothy Seward, Madame Gustave Henry, General Roberts, and G. J. Warren. These blooms were of the greatest merit, and not less remarkable than the blooms was the extraordinary foliage shown. Mr. W. J. GODFREY, Exmouth Nurseries, was 2nd. Mrs. Mease, G. J. Warren, and Joseph Brooks were the best represented varieties in this stand.

The 1st prize in Mr. H. J. Jones' special class for an exhibit of two blooms each of Mrs. Wm. Mease, G. J. Warren, and Mme. Carnot was won by Mr. W. MEASE, the 2nd by Mr. W. HIGGS, and the 3rd by Mr. G. FOSTER.

PLANTS.

The best collection of four standard-trained specimens (any varieties) was from Mr. W. Davey, gr. to C. C. PAINE, Esq., Hillfield, Haverstock Hill, N.W. His varieties were W. Tricker, Cleopatra, Stanstead Surprise, and Eva Knowles. These were much better-grown plants than the 2nd prize collection from Mr. F. E. WRIGHT, gr. to J. TROUP, Esq., Essex Lodge, Upper Clapton.

Six trained specimens Pompons were best from Mr. F. Gilkes, gr. to A. MORRIS, Esq., Court Green, Leigham Court Road, Streatham, showing the varieties: W. Kennedy, crimson; W. Westlake, yellow; Frenzy, bronze; and St. Michael, yellow.

Mr. F. E. WRIGHT, gr. to J. TROUP, Esq., Essex Lodge, Upper Clapton, had very excellent plants in the class for four trained specimens, any variety, showing Charles Davis, Jno. Shrimpton, W. Tricker, and Col. W. B. Smith. Chas. Davis and Jno. Shrimpton were the best plants. 2nd, Mr. F. Gilkes, who had also good plants, particularly of the varieties, Jno. Shrimpton and Col. Smith.

Groups.—The groups of Chrysanthemums in pots, with foliage plants, arranged on a circle of 12 feet in diameter, were this year in the usual spot in the side gallery. The space being so limited, and always circular in shape, it would be unfair to criticise the exhibits from the standpoint that they offer no departure from the previous cone-like method of arrangement. That scarcely any other disposition of the plants would be possible, must be granted, and this allowed for, the highest praise is deserved by the exhibitors. The winner of the 1st prize was Mr. J. SPINK, Summer Road Nurseries, Walthamstow; his Chrysanthemums were very well cultivated, and a few of the novelties, such as Mrs. White Popham, Mrs. T. Carrington, &c., could be noticed amongst them; a few plants of Cocos Weddelliana amongst the plants, with one for a crown, and a few Codiaums around the group, constituted the ornamental foliage feature. Mr. W. Howe, gr. to Sir H. Tate, Bart., Park Hill, Streatham Common, who has won many 1st prizes for such exhibits previously, was a good 2nd; and Mr. E. Dow, gr. to W. E. FAY, Esq., Bickley Hall, Bickley, was 3rd.

AMATEURS' CLASSES—DIVISION A.
CUT BLOOMS.

Japanese blooms.—The winner of the class for eighteen Japanese blooms distinct, was Mr. L. GOOCH, gr. to T. WICKHAM JONES, Esq., Tower Lodge, South Norwood, there being two other exhibits in the class. There were fine blooms of Mutual Friend, Madame Carnot, Simplicity, Mrs. H. Weeks, International, Edith Tabor, Charles Davis, and Vivand Morel. 2nd, Mr. A. HOONEY, gr. to G. H. COX, Esq., The Grange, East Barnet; and 3rd, Mr. A. N. SEABROOK, gr. to W. WILLIS, Esq., Ellerslie, Buckhurst Hill, Essex, both of the collections being commendable.

There was much competition in the class for twelve blooms, and the 1st prize was won by Mr. W. A. BROWN, gr. to H. W. SILLEM, Esq., The Pines, Hersell, Woking, with a collection of blooms of first class quality, and including several of last season's novelties. Of the eleven other competitors, Mr. R. Gladwell, gr. to SYDNEY SMITH, Esq., Werndee Hall, South Norwood, was 2nd; and Mr. J. Acock, gr. to Mrs. BACON, Stoneleigh, Worcester Road, Sutton, Surrey, 3rd.

There were twelve exhibits of six blooms distinct, and the 1st prize was won by Mr. R. GLADWELL. He had a first-class bloom of G. J. Warren, and his other blooms, Mdle. Marie Horté, Phœbus, Madame Carnot, M. Chenon de Leché, and Reine d'Angleterre, were all good. 2nd, Mr. W. PERRIN, gr. to C. W. RICHARDSON, Esq., Sawbridgeworth.

The best blooms of any variety were of Phœbus, from Mr. Jno. Denyer, gr. to Ed. SMITH, Esq., Ingleside, Chatham.

Incurveds were not very good, being too flat. The best collection of twelve blooms was shown by C. E. WILKINS, Esq., Wellington, Swanley Junction, and the same exhibitor was the winner of the class for six varieties.

The best blooms of any one variety were of C. H. Curtis from Mr. A. HOONEY.

DIVISION B.

The winner of the class for eighteen Japanese blooms distinct, was A. R. KNIGHT, Esq., Ashford, Kent. The blooms were of good size, but there was a great lack of variety, yellow and bronze coloured flowers being too common. There were five collections.

A. H. NEEDS, Esq., won the class for twelve blooms with an exhibit of very fine flowers, and a pretty collection, and this exhibitor was 1st also for six blooms. The best blooms of one variety were of Phœnix from NORMAN WRIGHTSON, Esq., 55, Elgin Road, Addiscombe, Surrey, who showed the variety in grand condition.

A. R. KNIGHT, Esq., won for twelve incurved, having well-built blooms of moderate size. The best collection of six blooms were from Mr. W. G. P. CLARK, York Road, Hitchin.

Six sprays of Pompons not disbudded were best from Mr. A. TAYLOR, East Finchley, N.

MAIDEN GROWERS.

The four classes reserved to exhibitors who have never previously showed at the N. C. S. exhibitions were exceedingly well competed, and the sign is a very encouraging one. Mr. H. FOLKES, gr. to E. C. STRACHAN, Esq., Gaddesden Place, Hemel Hempstead, had the best six Japanese, there being sixteen exhibitors in the class. Fifteen again staged collections of three blooms, and the winner proved to be the same as in the class for six blooms.

Mr. Jas. COOMBER, gr. to Mrs. SAUNDERS, Warren Lodge,

Kingston Hill, had the best collection of six incurveds; and Mr. R. POOL, gr. to J. B. PURCHASE, Esq., Blackstones, Redhill, won the 1st prize for three blooms.

TABLE DECORATIONS, BOUQUETS, &c.

These, as usual, were of much merit, and altogether made a great display. The largest class in the section called for a table of bouquets, wreaths, sprays, buttonholes, &c., with a view to displaying the effectiveness of the Chrysanthemum. This class was in one of the galleries, and an exhibit from Messrs. PERKINS & SONS, Coventry, won the 1st prize. One of the features upon the table was a very fine cross of White Chrysanthemum blooms, over which were thrown a few slender sprays of bright red-coloured Ampelopsis Veitchii. Then there were shower bouquets, a floral harp, cushions of flowers, &c. The table was covered with a green cloth, and a large mirror. 2nd, Miss N. ERLEBACH, florist, Stoke Newington, who had a rich exhibit which erred in being a little overdone. The best three epergnes were a trio from Mr. C. B. COLE, The Vineyard, Feltham; and Mr. F. W. SEALE, Vine Nurseries, Sevenoaks, was 2nd. There were many exhibits, and for the epergnes, a few small decorative blooms are the most suitable, these being relieved with pretty Codiaum leaves, and slender greenery.

Mr. Mark WEBSTER, gr. to E. J. PRE-TON, Esq., Kelsey Park, Beckenham, had the best exhibit of two vases of Pompon or Anemone Chrysanthemums, and there were very many other exhibits. 2nd, Mr. W. GREFF, Jr., Harold Wood, Essex. We did not see any Anemone-type flowers in either exhibit.

The best two hand-bouquets were shown by Mr. MARK WEBSTER, who had very pretty ones indeed. None but single-flowered varieties were utilised by this exhibitor, nor could any be more charming. There was a class for hand-baskets (Ladies), as suitable for placing upon a drawing-room table, and Miss EASTERBROOK, who took 1st prize, had a charming arrangement. The variety Edith Tabor and a white one, were those used. There were nearly a dozen exhibitors in the amateurs' class for one vase of six blooms of any Japanese Chrysanthemum, and Mr. THOS. PARKINE, gr. to F. W. F. WARD, Esq., 34, Bisham Gardens, Highgate, was the winner of 1st prize. The exhibits generally were most satisfactory.

Miss EASTERBROOK won 1st prize in the remaining class of this section. It called for a basket of natural autumn foliage and berries, and this exhibitor beautifully balanced the one against the other, obtaining a very admirable effect.

FRUIT AND VEGETABLES.

There were a few classes as usual for fruits and vegetables, and beyond these many special prizes were offered for vegetables by several firms.

The best three bunches of white Grapes were Muscats of Alexandria, from Mr. W. H. LEES, gr. to F. A. BEVAN, Esq., Trent Park, Barnet; and the best two of black Grapes were capital Black Alicantes, from Mr. W. HOWE.

Gros Colmar was best shown by Mr. W. TAYLOR, gr. to C. BAYR, Esq., Tewkesbury Lodge, Forest Hill, S.E.

For six dishes of dessert Apples, Mr. H. BERWICK, Sidmouth Nurseries, Devon, was 1st; and Mr. A. J. THOMAS, Bargins Hill, Rodmersham, Sittingbourne, 2nd. The specimens were very commendable.

Mr. W. STOWERS, gr. to G. H. DEAN, Esq., Sittingbourne, had the best kitchen Apples, in fourteen dishes; and Mr. A. J. THOMAS won for six dishes of dessert Pears, showing very nice ripe fruits of choice varieties.

Messrs. Sutton & Sons' special prizes for six dishes of Potatoes brought a great amount of competition. Mr. E. S. WILES, gr. to the Hon. IVELYN HUBBARD, M.P., The Rookeries, Down, Kent, won the 1st prize; and seven or eight other prizes were awarded in this class. The best two dishes of Potatoes were from Mr. Silas COLE, gr. to the Right Hon. Earl SPENCER, Althorp Park, Northampton.

Messrs. Webb & Sons, Wordsley, Stourbridge, offered special prizes for a collection of nine dishes of vegetables. Mr. E. BECKETT, gr. to Lord ALDENHAM, Aldenham House, Elstree, won 1st prize; and Mr. R. LYE, gr. to Mrs. KINGWELL, Sydenham Court, Newbury, 2nd prize, the collection in each case being very good.

Special prizes were also offered by Mr. R. SYDENHAM for various kinds of vegetables, and the principal prizes in these numerous classes were won by Mr. E. BECKETT, Mr. R. LYE, Mr. T. WILKINS, gr. to Lady THEODORA GUEST, Inwood House, Henstridge; Mr. READ, gr. to the Earl of CARNARVON, Bretby Park, Burton-on-Trent; Mr. H. FOULKES, gr. to C. E. STRACHAN, Esq.; and Mr. W. POPE, Highclere Gardens, Newbury.

EXHIBITS FROM THE TRADE.

Mr. H. J. JONES, Ryecroft Nursery, Ilith Green, Lewisham, made a magnificent display on the ground floor, under the large organ. There were two large groups of Chrysanthemum plants, and betwixt these was a table, where handsome vases containing handsomer blooms were displayed, covering altogether an area of 400 feet. The groups of Chrysanthemums were finer than usual of Codiaums and other decorative plants, these in the present instance being confined to the margin of the group. In addition to all this were many cut blooms of high-class novelties, and a few of the latest were well represented, as Mrs. H. J. Jones, a very large truly incurved flower, white, or tinted with palest lemon; R. Hooper Pearson, the deepest yellow Japanese yet raised, several plants being shown that demonstrated the grand habit of this fine variety; Lord Aldenham, a yellow sport from Ed. Molyneux; Mr. A. Barrott, a reddish and buff sport from Mrs. C. Harman-Payne, and many others. A Gold Medal was awarded this very large and meritorious exhibit.

Messrs. H. CANNELL & SONS, Swanley, filled a long table to overflowing with flowers and plants. There were six long rows of Chrysanthemum blooms, and many varieties, such as Swanley Giant, Mrs. W. Mease, N. C. S. Jubilee, Lady Hanham, Pride of Madford, Ella Curtis, &c., were represented capitally. But Mr. Cannell's Chrysanthemums are noticed more fully in another column. In addition to the Chrysanthemums, however, there was an extraordinarily fine display of sprays of winter-flowering zonal Pelargoniums; and at either end of the table were groups of Cannas, of magnificently bright colours. A Gold Medal was awarded to Messrs. Cannell.

Close to Mr. Cannell's exhibit was a fine group of Chrysanthemums in bloom, from Messrs. J. PEED & SONS, Roupell Park Nurseries, Norwood Road, London, S.W.

Messrs. W. RAY & Co., Mount Pleasant Nursery, Teynham, Kent, exhibited a dozen blooms of a pretty yellow sport from Mdle. M. A. de Galbert. The sport has been named Archie Ray.

Mr. J. AGATE, Chrysanthemum Nurseries, Havant, showed blooms of Jane Molyneux, a fine new white Japanese; John Miles, a new incurved; and Nellie S. Threlfall.

Messrs. W. CUTBUSH & SONS, Highgate Nurseries, London, N., had a large table in the gallery, which displayed groups of Chrysanthemum plants, of Begonia Gloire de Lorraine, Pernettyas, Cyclamens, Ericas, a few Carnations, Malmaison type and tree varieties; Lilies of the Valley, from retarded crowns; Roman Hyacinths, Richardia Elliotiana, Apples, &c.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., had a group of Conifers in pots, Pernettyas, variegated Hollies, &c. Also a standard-clipped Box-tree, representing a bird over the globular head of the tree.

From Mr. R. OWEN, Maidenhead, was shown a grand 1 ft of cut Chrysanthemums, and among these was noticed a novelty named Lord Cromer, a very bright crimson, Japanese, with light buff reverse. It is not very large, but a most attractive variety; Mrs. H. Weeks, and others were very fine in this stand.

Mr. W. J. GODFREY, Exmouth Nurseries, Devon, furnished one side of a long table with specimen blooms of newer Japanese and incurveds. We noticed Mary Molyneux, Le Grand Dragon, Marie Calvat, Lady Ridgway, G. J. Warren, Mrs. W. Mease, Prince Charles of Denmark, a capital yellow Japanese incurved; Duke of Wellington, and others.

Messrs. B. S. WILLIAMS & SON, Upper Holloway, London, N., had a large non-competitive exhibit, including a good number of hybrid Cypripediums, Dendrobiums, Lycas's Skinneri, Cattleya labiata, and rare batches of Ericas, Pernettyas, &c. A small Gold Medal was awarded this exhibit.

Mr. JNO. RUSSELL, Richmond Nurseries, Surrey, showed a collection of Ivies in pots, the group exhibiting very considerable variety, including several forms of Tree Ivy.

Mr. T. S. WARE, Ltd., Hale Farm Nurseries, Tottenham, had an exhibit of Chrysanthemum flowers.

Various stands from manure manufacturers and dealers, displayed the "One and All" manures, Ichthemio guano, City of Manchester Concentrated Manure, Law's Garden Manures, Dowell & Sons specialties, the Permanent Nitrate Committee's Nitrate of Soda, and Mr. J. George's specialties from Putney, including Thomson's Vine and Plant Manure.

ROYAL HORTICULTURAL.

NOVEMBER 8.—The meeting of the committee on this occasion resulted in a very fair display for the late period of the year, and of this Orchids formed no inconsiderable part. Amongst these last was a good show of Garden hybrids and crosses of hybrids from Messrs. J. VEITCH & SONS, and of varieties of Cattleya labiata from Mr. J. DOUGLAS. Mr. ELWES' brilliant show of Nerines attracted much attention. Naturally the Chrysanthemum and hardy fruit formed the backbone of the display.

Floral Committee.

Present: W. Marshall, Esq., in the Chair; and Messrs. H. B. MAY, J. H. FITT, G. STEVENS, J. JENNINGS, J. F. McLEOD, W. HOWE, C. E. PEARSON, J. D. PAWLE, H. J. BENNETT-POE, CHAS. SHEA, E. T. COOK, H. TURNER, C. T. DREURY, C. JEFFRIES, Ed. MAWLEY, and Geo. ENGLEHEART.

Messrs. J. VEITCH & SONS, Ltd., Royal Exotic Nursery, Chelsea, displayed several crosses between Begonia socotrana and tuberous varieties. Among the finer were B. Winter Perfection, a semi double as regards the male blooms, which latter preponderate. The male flowers measure 2½ inches across, and possess smaller overlapping petals ½ to ¾ inch in length. The colour is a deep rose-pink, foliage green, oval in general outline, and stems green; height, 1½ foot and over (Award of Merit). The same firm showed Begonia Mrs. Beal, previously certificated, and B. Myra, with male and female blooms of single shape and a bright pink tint—a variety from its pendulous habit, well adapted for planting in baskets. Other plants shown were Polypodium nigrescens, distinct; P. vulgare grandiceps, a variety with crumpled fronds, and a habit dwarf and compact; P. grandi-nigrescens, from P. grandiceps and P. nigrescens, a supposed hybrid with peculiar bunched tips or tasselling to the fronds (First-class Certificate); Dracana The Sirdar, a plant with broad recurving leaves of bronzy-green tint broadly margined with rose (Award of Merit); a large plant, 6 feet in diameter and 3½ feet high, of Aster Tradescanti, small white blossoms in extraordinary profusion; Aster grandiflorus, fine purple rays and yellowish disc; and A. Drummondii Sappho (Award of Merit).

H. J. ELWES, Esq., Colesbourne Park, Gloucestershire (gr., Mr. Lane), showed a number of *Nerines* in much variety of colour, and an Award of Merit was made to N. Mrs. Douglas, pink, having a bluish tinge, with fine flowered corymbs; N. Lady Clementine Mitford, pale pink, with a moderately long pedicel and tallish scape (Award of Merit); N. Miss Jekyll, a salmon-rose, very pretty, with long pedicels (Award of Merit). A Silver-gilt Banksian Medal was awarded for the group.

W. H. EVANS, Esq., Forde Abbey, Chard (gr., Mr. J. Crook), showed a boxful of fine double-flowered Violets, culled from plants growing in the open.

Messrs. BUNYARD & Co., Old Nurseries, Maidstone, showed a number of plants of the fine white-flowered *Pelargonium*, White Abbey, a semi-double flower of great substance and long endurance in all weathers. The plants were growing in pots, and had been specially treated for late flowering. It is the best white variety we know of for bedding or pot-culture, especially as a winter flowerer.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, exhibited a collection of *Polypodiums* in fifty species and varieties. We name a few of the more rare:—*P. Xiphias*, a frond of great breadth, forming almost a "bird's-nest" shape; *P. piloselloides*, a small, creeping species, with frondose rhizomes of dwarf, small growth; *P. aureolatum*, *P. crassifolium*, *P. decurrens*, a handsome, boldly-divided frond; *P. nigrescens*, *P. plumosum*, *P. terminale*, forming a confused mass of bright-green palmate fronds; *P. crenatum*, *P. trichodes cristata*, *P. Lenzanianum*, a handsome species of dwarf, spreading habit; and the climbing *P. venosum*. Mr. MAY also showed a number of plants of *Begonia Gloire d. Lorraine*, and a variety of the *Chrysanthemum Ivory* (Silver-gilt Flora Medal).

Messrs. SANDER & Co., The Nurseries, St. Albans, exhibited a few new specimens and varieties, including some well-cultivated specimens of *Acalypha Sanderiana*, with a multiplicity of its pendent floral tails; *A. Godseffiana* is inconspicuous as regards the flowers, but has prettily variegated foliage; *Dracana Sanderiana*, and two plants of *Kentia Kersteniana*, a striking looking Palm, with leaves widely pinnate, the wedge-shaped leaflets curiously erose, and of dark green tint.

Mr. W. WELLS, Earlswood Nurseries, Redhill, showed a rather extensive lot of *Chrysanthemum* blooms in variety, including some that had been cut from plants not disbudded; early-flowering Japanese of various sections, incurveds, and others. We remarked in the early-flowering varieties the green flowered *Madame E. Rogers*, a flat, slightly incurved flower; the showy *Crimson Pride*, *Mychett Beauty*, both yellow and white forms. Among Japanese there were nice examples of *Nellie Pockett* (Award of Merit), *President Nonin*, *Madame Phillip Rivoire*, *Mrs. White Popham*, *Mary Molyneux*, *John Pockett* (Award of Merit), *Leocadia Gentil*, a minutely-haired variety; *General Paquin*, a kind of sky-terrier-like flower of a reddish-orange in tint; *President Bevan* (Award of Merit), *Joseph Chamberlain*, a crimson-tipped bronze. A few incurved varieties were mixed in the stands with the Japanese, and some few of them were in fine form. The not disbudded flowers were rather unfairly handicapped by being placed beside the highly artificial Japanese and incurveds (Silver Flora Medal).

Mr. T. S. WARE, Hale Farm Nurseries, Tottenham, showed a quantity of *Cactus* and *Pompon Dahlias*, as well as a few single-flowered *Chrysanthemums*, chiefly white and pink varieties. The Dahlias were wonderfully fresh looking considering the time of year (A Silver Flora Medal).

Mr. W. J. GODFREY, The Nurseries, Exmouth, showed several blooms of *Chrysanthemum Dome d'Or*, a fine, orange-coloured incurved, the flowers being most nicely developed; of *King of the yellows*, *Coeleste Falconnet*, *Marie Calvat*, *Le Grand Dragon*, *Mr. T. Carrington*, *Mrs. J. G. Ganner*, a fine, yellow incurved Japanese; *Lord Boston*, and *President Bevan*, this last receiving an Award of Merit.

Mr. Molyneux, gr. to J. C. GARNIER, Esq., Rooksbury, Fareham, exhibited a pure white Japanese *Chrysanthemum* of striking aspect, *Jane Molyneux* (Award of Merit).

Mr. ROBT. OWEN, Castle Hill Nurseries, Maidenhead, showed the beautiful Japanese *Lord Cromer*, crimson, with a fawn-tinted reverse (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. J. O'Brien (Hon. Sec.), De B. Crawshaw, J. Douglas, H. M. Pollett, H. Ballantine, H. Little, F. J. Thorne, W. H. Young, T. Statter, and H. J. Chapman.

A very bright and varied group was staged by Messrs. J. VERRA & Son, Royal Exotic Nursery, Chelsea, for which a Gold Medal was unanimously recommended.

The main feature of the group consisted of handsome hybrid Orchids which flower at this season, and which have been raised by them. The finest three of these had *Lælia Perrini* as the seed-bearing parent, of which were shown *L.-C. × Decia* (*L. Perrini* × *C. Dowiana*), *L.-C. × Statteriana* (*L. Perrini* × *C. labiata*), *L.-C. × Lady Rothschild* (*L. Perrini* × *C. Warscewiczii*); a fourth, *L.-C. × Semiramis* (*L. Perrini* × *C. Gaskelliana*), was also shown. All possessed very charming flowers, exhibiting the brightness and peculiar characteristic of the lip of *L. Perrini*, but with all the parts much larger than in that species. Another fine set of hybrids which may be mentioned in the same terms, viz., hybrids of *Cattleya Bowringiana*, were shown—*C. × Portia* (*Bowringiana* × *labiata*); *C. × Wendlandi* (*Bowringiana* × *Warscewiczii*); varieties of *C. × Mantini*, of the Veitch strain (*Bowringiana* × *Dowiana*), and *C. × Chloris* (*Bowringiana* × *Maxima*).

Others remarkable for beauty were hybrids of *Lælia-Cattleya* × *Nysa*, which seem an improvement on *L.-C. × exoniensis*; the pretty *L.-C. × Ascatia* (*C. Trianae* × *L. xanthina*); *L.-C. × callistoglossa ignescens*; *Lælia* × *splendens*, *Cypripedium* × *Euryades*, *C. × Milo*, *C. × Niobe*, *C. × microchilum*, varieties of *C. × Arthurianum*, *C. × T. B. Haywood*, *C. × enanthum superbum*, *C. × Harrisianum superbum*, *C. × Prospero*, and *C. × Actæus*, both hybrids of *C. insignis Sanderæ*, but not differing much from pale *C. × Leeanum*; *Masdevallia* × *Ajax*, *M. × Imogen*, *M. × Parlatoresana*, *Miltonia* × *Bleuana*, &c.

Of the species and varieties which attracted much attention were two fine examples of the true *Cypripedium insignis Sanderæ*; a good specimen of *C. Lawrenceanum* *Hycanum*, *Cattleya aurea*, varieties of *C. labiata*, fine spikes of *Oncidium varicosum*, *O. Forbesii*, *O. dactyle*, *O. prætectum*, and *O. spillopterum*; plants of the elegant *Ionopsis paniculata*, *Dendrobium atroviolaceum*, *D. bracteatum*, and a pretty tuft of the singular-looking *Pleurothallis lateritia*, with its slender sprays of brick-red flowers.

The Right Hon. JOSEPH CHAMBERLAIN, Highbury, Birmingham (gr., Mr. Smith), was awarded a Silver Banksian Medal for a group made up of the pretty *Cattleya Mrs. Edicott* (*maxima* × *Lodigesii*), a neat light rose-coloured flower, with delicate purple veining on the lip; *L.-C. × Fausta delicata* (*C. Lodigesii* × *L.-C. × exoniensis*), *L.-C. × Semiramis* (*L. Perrini* × *C. Gaskelliana*), *L.-C. × Sallieri magnificum* (*L. purpurata* var. × *C. Lodigesii*), a showy hybrid, with pale-rose flowers, and dark purplish-crimson front to the lip; and a very fine form of *Dendrobium Phalanopsis Schroderianum* with white flowers, having the outer halves of the petals bright-rose, and the blade of the lip purple.

J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whiffen), staged a pretty group of varieties of *Cattleya labiata*, of which the most remarkable were *C. l. Etona*, with white sepals and petals, and purple marking on the lip; and *C. l. Bradshaw's* var., an equally charming bluish-white form, with pale-rose front to the lip. Also in the group were *Cattleya* × *Mantini nobilior*, *L.-C. × Decia* and *L.-C. × Statteriana* (Silver Banksian Medal).

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed *Cattleya Bowringiana* "Lady Wigan," a fine flower, exhibiting remarkable colour variation. The sepals and petals were white slightly tinged with lilac; the lip white at the base, having the medium zone of a claret-purple, and the apical portion rose colour (Award of Merit).

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr., Mr. H. J. Chapman), showed the fine *Cypripedium* × *Wottoni* (*bellatulum* × *callosum*). The large bold flower had the upper sepal feathered with rosy-purple, the petals white, tinged with dark rose, and a still darker reddish-rose labellum (Award of Merit).

Sir WM. MARRIOTT, Bart., Down House, Blandford (gr., Mr. Denny), showed *Sopho-Lælia* × *Marriotti* (*S. grandiflora* ♀, *Lælia flava* ♂) with a two-flowered inflorescence of bright yellow flowers, with reddish markings on the lip.

A Silver Banksian Medal was awarded to H. F. SIMONDS, Esq., Woodthorpe, Beckenham (gr., Mr. G. E. Day), for a group in which were varieties of *Cattleya labiata*, *Lycaste Skinneri alba*, *Masdevallia tovarensis*, *Oncidium Forbesii*, *O. varicosum*, *Odontoglossum grande*, *Acampe papillosa*, &c.

Messrs. F. SANDER & Co., St. Albans, showed for the first time the singular *Dendrobium chloropterum*, a very curious species, with the habit of *D. atroviolaceum*, having emerald-green flowers, the labellums veined with dark purple (Botanical Certificate). Messrs. Sander also showed *Cymbidium Tracyanum*, and *Cypripedium* × *Jensenianum* (*hirsutissimum* × *vexillarium*).

Lord LISBURN, Crosswood Park, Aberysthwith (gr., Mr. Williams), showed *Cattleya labiata Lisburniana*, a large variety with rich rose-coloured flowers, the labellum bearing a crimson veining.

Captain HOLFORD, Westonbirt, Tilbury (gr., Mr. A. Chapman), showed *Cypripedium* × *Statterianum*, Holford's variety (*Spicerianum magnificum* × *vexillarium*), a showy flower with large, reflexed, white upper sepal heavily tinged with dark rosy-lilac.

J. T. BENNETT-POE, Esq., Holmwood, Cheshunt (gr., Mr. Downes), showed the true *Vanda insignis*, with fine broad rose-coloured labellum.

Mr. JAS. DOUGLAS, Edenside, Great Bookham, showed a group of cut blossoms of very good forms of *Cattleya labiata*, several of the varieties being very brilliant, with great depth of colour (Bronze Medal).

Fruit Committee.

Present: G. Bunyard, Esq., in the chair; and Messrs. W. Poupert, J. Cheal, A. H. Pearson, J. Wright, A. Dean, C. Herrin, W. Bates, G. Woodward, G. Wythes, F. Q. Lane, J. Smith, W. Empson, and J. H. Veitch.

Messrs. SUTTON & SONS, Reading, exhibited sixteen fruits of one of Mr. Owen Thomas' newly raised Cucumbers, named by them Sutton's Everyday. It is apparently a variety which develops perfectly at the dull season, the fruits shown being 1 foot 8 inches long and 3 inches in diameter where thickest. If it will thicken approximately as much in mid-winter, it will be an undoubted acquisition. The colour of the rind is dark green.

Mr. W. BYGROVE, gr., Rous Tuck Court, Evesham, showed a dish of well-filled pods of *Pea Charles I*.

A small number of dishes of new varieties of Apples were shown, but the committee were difficult to please, and no award was made.

A Cultural Commendation was made to Mr. J. VERT, gr.,

Audley End, for *Cucumber Vert's Favourite*, a slender and slight ribbed fruit.

The most striking feature of the meeting was the very extensive collection of Apples shown by Messrs. BUNYARD & Co. of Maidstone, consisting of about 100 dishes of sterling varieties cultivated in gardens and orchards in this country—of course, excepting *Cider-fruit*. The fruits were generally as remarkable for fine development as for high colour in all cases where the natural tint is not green. We do not remember to have seen more or brighter colour in Apples in any previous year. (The Society's Gold Medal was awarded.)

THE SCOTTISH HORTICULTURAL ASSOCIATION.

NOVEMBER 1.—The last meeting of this body of gardeners was held in St. Andrews Hall, Edinburgh, on the above date, being attended by about 100 members, Mr. TODD in the Chair. In the absence of Mr. Donald, of Ferguslie, Paisley, through domestic affliction, Mr. A. Laird, the secretary, read his paper on "The Chrysanthemum as a Plant for Cutting and Conservatory Decoration." The lecture gave the history of the various types now existing.

The lecturer dealt with the subject somewhat exhaustively, dealing with standard varieties in each class, with potting, manuring, and cultural details, and his remarks received close attention from those present.

A hearty vote of thanks was then passed to Mr. McDonald for his paper; and the President announced that it was anticipated that the coming show would prove a greater success than even that of last year.

As this was the last meeting before the show, not much was exhibited, though it was a more crowded meeting than any other of the session. The dwarf magenta coloured variety of *Chrysanthemum*, which is likely to prove valuable for foregrounds, very floriferous, and about a foot high, named *Madame Marie Massé*, came in fine form from Mr. MOLLAM, of Trinity Cottage. Messrs. GRIEVE & SON also sent a promising seedling *Chrysanthemum*, *The Scotchman*; Mr. DALGLEISH, a fine-sized, delicate coloured seedling *Begonia*; Mr. LITTLE, *Largie Castle*, *Tayinloan*, a nice collection of flowers of *Hydrangea Hortensia* cut from open-air plants; Mr. CHAPLIN, St. Leonards, Edinburgh, sent a fine specimen of *Begonia Gloire de Lorraine*; the President, Mr. TODD, showed a charming vase filled with flower-buds of *General Jacqueminot Rose*, dainty as if it were June instead of November, and a vase of *Chrysanthemum* blooms, grasses, and *Asparagus plumosus*, notable among the former being *Source d'Or*, *rs. Watson*, *Vivian Morell*, *Globe d'Or*, and *W. H. Lincoln*. D. T. F.

HEREFORD FRUIT AND CHRYSANTHEMUM.

NOVEMBER 1, 2.—This Society held its seventh annual show in the Shire Hall, Hereford, and there was a splendid display of Apples and Pears. The former were better shown than at any previous show, and were remarkable for their high colour.

Mr. WATKINS, Pomona Farm, had an exceptionally fine collection of fifty dishes, and also a hundred dishes of distinct varieties, which he staged for exhibition only. Mr. PITT, Abergavenny, had twenty-four dishes of Pears in excellent condition; but the best samples of these fruits were undoubtedly the twelve dishes shown by Mr. Ward, gr. to Lady EMILY FOLEY, Stoke Edith Park.

Chrysanthemum blooms were fairly good, but there was a falling off in competition in the classes for groups.

Open classes.—APPLES, fifty dishes, distinct. Four competitors entered in this class, and Mr. WATKINS obtained a good lead, with large, highly-coloured fruits. In his collection was a dish of *British Queen*, a very handsome fruit of excellent flavour, supposed to be a cross between *King of the Pippins* and *Blenheim Orange*. 2nd, Messrs. FEWTESS Bros., Gillington.

For a collection of thirty dishes of Apples, distinct, six exhibitors entered; Mr. WARD, with large, bright fruits being 1st; and Mr. Smith, gr. to R. C. MITCHELL, Esq., Moreton Court, a close 2nd.

For thirty dishes of Pears, distinct, Mr. PITT, Abergavenny, was 1st, with fine fruits, some of his best being *Beurré Diel*, *Pitmaston Duchess*, *Thompson's*, *Marie Louise*, *Beurré Superfin*, *Emile d'Heyst*, and *Comte de Lamy*. Mr. WATKINS was a close 2nd.

Mr. WARD was 1st for twelve dishes, distinct, with fine clean fruits, viz., *Glou Morceau*, a grand dish; *Beurré Hardy*, *Doyenné du Comice*, *Durondeau*, *Thompson's*, *Marie Louise*, and *Beurré Superfin*. The latter was a very fine dish, but somewhat out of character, the result of double grafting; 2nd, Mr. Grindrod, gr. to G. F. BATES, Esq., Whitfield.

The best dish of a culinary Apple was *New Hawthornden*, from Mr. WATKINS; and the best dish of dessert, one of *Cox's Orange Pippin*, from Mr. J. DAVIS.

The largest dish of PEARS, five fruits, was from Mrs. BLASHELL, Bridge Sallars Farm, being a magnificent dish of *Pitmaston Duchess*, the heaviest fruit weighing 2 lb. 3 oz., grown upon an espalier tree, which carried a good crop.

AMATEURS.

In the class for twenty-four dishes of Apples, twelve culinary and twelve dessert, Mr. R. N. WITING, Credenhill, Hereford, was 1st, with a creditable lot of clean fruits, the

best being King of the Pippins, Egremont Russet, Claygate Pearmain, Cox's Orange, Emperor Alexander, and Bismarck.

The best twelve dishes of culinary Apples were from Mr. Nunn, gr. to J. WOODHOUSE, Esq. In this collection Lord Derby, Warner's King, New Hawthornden, Cellini, and Emperor Alexander were conspicuous dishes; 2nd, Mr. J. Davis, gr. to W. E. KING KING, Esq., Bodenham. Eleven entered in this class.

In the class for eight dishes of dessert Apples, several of the eighteen exhibitors were disqualified for including kitchen varieties. Mr. GRINDROD was deservedly 1st, having Cox's Orange, Egremont Russet, Ribston Pippin, Adams' Pearmain, Blenheim Orange, &c.; 2nd, Mr. WATKINS.

PEARS, eight dishes, 1st, Mr. RICK, gr. to G. H. HADFIELD, Esq., Moraston, Ross, with capital dishes of Josephine de Malines, Pitmaston Duchess, Doyenné du Comice, Marie Louise, Durondeau, &c.

Non-competitive Exhibits.—Mr. C. WRITING, White Cross Nursery, Hereford, staged sixty dishes of splendid Apples; and THE ENGLISH ROSE COMPANY, Hereford, staged eighty dishes of Apples and Pears. Mr. WILSON, florist, Commercial Street, Hereford, exhibited some beautiful wreaths, crosses, and bouquets.

CHRYSANTHEMUMS.

For thirty-six Japanese blooms, 1st, Mr. Robinson, gr. to G. HARLEY, Esq., Brampton Bryan, his best being Edith Tabor, Australe, G. C. Schwabe, and E. Molyneux.

For twelve Japanese blooms, 1st, Mr. Davis, gr. to A. W. G. WRIGHT, Esq., Quarry House, with good blooms of Com. Blussett, Madame Briant, Australie, M. Pankoucke, &c.

For twelve incurved blooms, 1st, Mr. ROBINSON; 2nd, Mr. DAVIS.

The best group of Chrysanthemums, in a space 12 feet by 7 feet, was from Mr. Williams, gr. to Sir J. PULLY, Bart.; and the best group of flowering and foliage plants, upon a space 10 feet by 7 feet, was from Mr. Fox, gr. to Captain COTTRELL, The Garnons. *Thos. Coomber.*

TORQUAY DISTRICT GARDENERS'.

NOVEMBER 1, 2.—The above held their fourth annual autumn exhibition on the above date.

Mr. C. R. PROWSE, gr. to Dr. W. FORD EDGELOW, won the National Chrysanthemum Society's Silver Medal with a most effective group; and Mr. J. AGGETT, gr. to Mrs. CUMMING, was 1st in the smaller groups. Mr. J. STILES, gr. to Rev. G. LYONS; Mr. R. W. HODDER, gr. to Mrs. TREVOR BARKLEY; and Mr. W. R. SATTERLY, gr. to Mrs. RAWSON, were the chief prize-winners in the cut-flower classes. Mr. H. R. JONES, gr. to F. P. T. STRUBEN, Esq., staged a splendid display of fruit; and the local gardening class of the Technical Education Department, made a good show of vegetables.

EALING HORTICULTURAL.

NOVEMBER 2.—One of the best Chrysanthemum shows held in Ealing was seen in the Victoria Hall on this date, and the incurved varieties were in good form. Some miscellaneous exhibits of a high order of merit were also staged, and probably the fine Hall was never before seen to better advantage.

Groups were very good; the flowers of more than average quality. Mr. C. EDWARDS, gr. to H. W. PEAL, Esq., Ealing, had the best of the large; and Mr. R. DOWSING, gr. to C. O. CHAMBERS, Esq., Ealing, the best of the small ones. Mr. T. HOGG, gr. to A. G. DIXON, Esq., was 1st with a group of miscellaneous plants, Orchids in good variety being prominent in it.

Specimen plants of Chrysanthemums were the least satisfactory feature of the show.

Some very fine incurved blooms were shown by Mr. LONG, gr. to E. P. OAKSHOTT, Esq. Mr. H. KNIGHTLEY, gr. to N. ROBINSON, Esq., had the best six varieties, the old yellow, Mr. Bunn, being very good.

Mr. OAKSHOTT was 1st with twelve blooms of Japanese. The six best blooms of any one variety were those of Mutual Friend from Mr. OAKSHOTT.

There were classes for reflexed varieties, Anemone-flowered, Pompons, &c., all being represented; and, in addition, there were epergnes, bouquets, &c., of Chrysanthemums, and they made a very pleasant feature.

In the way of miscellaneous exhibits, Mrs. H. B. SMITH, Ealing, had high-class floral decorations. From Gunnersbury House Gardens, Mr. J. HUDSON brought fine specimens of Begonia Gloire de Lorraine and Lilium nepalense. Mr. GEO. REYNOLDS sent from Gunnersbury Park plants which had a charming effect in the front of the orchestra. Mr. COLLIER, gr. to Sir E. M. NELSON, Hanger Hill House, had a fine collection of Apples and Pears; and Mr. GEO. CANNON, nurseryman, Ealing, a large group of Palms and Chrysanthemums. *R. D.*

WARGRAVE AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

NOVEMBER 2.—A fortnightly meeting was held in the parish room, Wargrave, Mr. W. POPE presiding over a good number of members.

The attraction of the evening was the first of a course of lectures on Botany by Mr. J. W. GROVES, F.L.S., late Professor of Botany at King's College, London. At the outset the lecturer mentioned the various branches of the science, and stated that he should confine his attention to that branch

most particularly useful to the members as gardeners, viz., "The Structure and Life-History of Plants." He proposed to deal with the subject under the heads of (1) Cells; (2) Stems; (3) Roots, Leaf-stalk, and Leaf; (4) Flowers; (5) Fertilisation, Seed, and Fruit; (6), Germination, &c.; taking them up at alternate meetings of the Society, and illustrating his lecture with the magic lantern and microscope. "Cells," therefore, formed the subject of Wednesday's lecture, and the Professor gave an exceedingly clear and well illustrated answer to the question, "What is a cell?"

The Chairman, gr. to J. P. WHITE, Esq., The Willows, exhibited a group of fine-foliage plants, comprising Heliconia illustris rubricaulis, Anthurium Warocqueanum, Maranta zebra, Pandanus Veitchii, Leea amabilis, &c., which were greatly admired. *H. Coleby, Sec.*

KENT COUNTY CHRYSANTHEMUM.

NOVEMBER 2.—The spacious Drill Hall at Blackheath looked very pleasant indeed on the above date, for it was filled with Chrysanthemums and other plants, and there were also tables full of cut blooms.

There were charming groups of Chrysanthemum plants, well grown and bloomed, and set up with appropriate foliated plants. The best, a very meritorious one, came from Mr. E. DOVE, gr. to H. E. FRY, Esq., Bickley Hall; Mr. A. W. HOLLANDS, Leigh Park Nursery, was a good 2nd.

The leading class for cut blooms was for thirty-six, eighteen to be Japanese and eighteen incurved, distinct. Mr. T. ROBINSON, gr. to W. LAWRENCE, Esq., Hollingbourne, was placed 1st with some very good blooms indeed; his leading incurveds were C. H. Curtis, Miss Violet Foster, Miss M. A. Haggas, Mrs. J. Murray, Mr. R. Bahuant, Globe d'Or (a very bright pale golden variety), Empress of India, Leonard Payne, Golden Nugget, and Lord Wolseley; his finest Japanese, Mrs. J. Lewis, Australie, Madame Carnot, M. Pankoucke, Miss Ella Curtis, N. C. S. Jubilee, Mrs. Weeks, Madame Berger, and Pride of Madford. Mr. C. PAYNE, gr. to C. J. WHITTINGTON, Esq., Bexley Park, was 2nd.

There was a good competition with twenty-four Japanese. Mr. H. HURST, gr. to W. T. HOLLAND, Esq., Bexley, was 1st, having in fine character Lady Byron, Eva Knowles, G. C. Schwabe, N.C.S. Jubilee, R. Powell (a fine incurved Japanese), Simplicity, E. Molyneux, Charles Davis, Madame G. Henry, Australie, &c.; Mr. J. BLACKBURN, gr. to J. SCOTT, Esq., Chislehurst, was 2nd.

There was a good competition in the class for twelve Japanese, Mr. HURST being again 1st, and Mr. J. LYNE, gr. to H. T. TEAKES, Esq., Chislehurst, 2nd.

Incurved varieties were somewhat weak in the classes set apart for them. The best twelve came from Mr. OSMAN, the Gardens, Ottershaw Park, Chertsey; Mr. J. LYNE was 2nd.

Mr. C. RUSSELL, gr. to T. PIM, Esq., Crayford, had the best six blooms of incurved, one variety, having Baron Hirsch in good character.

Mr. OSMAN had the best six blooms of a white variety of Japanese, staging fine examples of Mutual Friend. The best six blooms of a coloured variety were those of Col. W. B. SMITH.

There were smaller classes for Japanese and incurveds, and also for reflexed and Pompons, the amateur classes being well filled.

The first of the President's special prizes for eight Japanese, eight incurved, and eight reflexed, was won by Mr. J. LYNE with good representatives of each type.

Mr. LYNE was 1st with a group of flowering and foliated plants—an excellent arrangement, enriched with Orchids, the brilliant Clorodendron fallax, &c. Some good table plants were also shown by Mr. LYNE.

Fruit.—There were a few classes for fruit. Mr. LYNE had the best two bunches of Black Grapes, showing well-finished Allcote; and Mr. W. TAYLOR, gr. to C. BAYER, Esq., Forest Hill, was 2nd, with two fine bunches of Gros Colman, but which lacked colour. The latter was 1st with White Grapes, having good Muscat of Alexandria. Dessert and culinary Apples and dessert Pears were also exhibited.

In the way of miscellaneous exhibits, Messrs. GEO. BUNYARD & Co., Maidstone, had about 100 dishes of Apples and Pears; a smaller collection came from Messrs. J. LAING & Sons, Forest Hill. Mr. H. J. JONES, Ryecroft Nursery, Lewisham, had a table of cut Chrysanthemums. Some Catleya blooms from Mr. J. CARVELL, and a few other subjects, found a place on the tables.

WOLVERHAMPTON CHRYSAN- THEMUM.

NOVEMBER 2, 3.—The annual exhibition of this Society was held in the Drill Hall on the above dates, and in the number and quality of the exhibits it was quite as successful as any former show.

This year being the jubilee of the incorporation of the town, the Society decided to offer for competition three Silver Cups—one valued £10, as 1st prize, in addition to the money award, for a group of Chrysanthemums, and which has to be won twice; the other two Cups, valued at £5 each, were allotted respectively to a class for thirty-six Japanese blooms, distinct, and a class for thirty-six incurved blooms. These Cups were also given as additions to the money awards as 1st prizes, and became the property of the winners on the first occasion.

The committee was wise in allowing the exhibitors to use a few foliage plants in the groups of Chrysanthemums, as the Chrysanthemum groups this year were undoubtedly the best that have been seen at Wolverhampton

for some time. The few graceful Palms and narrow leaved Crotons which were interspersed among the Chrysanthemums not only prevented the usual formality, but at the same time obviated the crowding together of the Chrysanthemum blooms.

Another improvement has been made in the schedule by omitting the class for twenty-four incurveds and twenty-four Japanese blooms, and substituting in their stead two classes, one for thirty-six Japanese blooms, distinct, and the other for thirty-six incurved blooms, in not fewer than eighteen varieties; the former class very seldom being satisfactory to the exhibitor who may be strong in one section, but weak in the other.

OPEN CLASSES.

For the group of Chrysanthemums there were three entries. The arrangement of the plants, the quality of the blooms, and the blending of the colours left nothing to be desired. 1st, Mr. W. SHINGLER, gr. to T. G. BAKER, Esq., Compton; 2nd, Mr. G. BRADLEY, gr. to Miss PERRY, Wergs Hall, Wolverhampton.

Groups of miscellaneous plants arranged for effect, four entries. 1st, Alderman C. T. MANDER, J.P., The Mount, Compton; Mr. Minton, gr. to F. SANDERS, Esq., Oaken, 2nd.

Chrysanthemum plants were well shown, Alderman T. C. MANDER and Mrs. EARP carrying off the principal prizes. Mr. R. M. SHELTON, Springfield House, Oaken, was 1st for Chinese Primulas.

In the cut-bloom classes, very strong competition was experienced, the flowers throughout being of high quality and well set up. For thirty-six incurveds, not fewer than eighteen varieties, nor more than two of any variety, Mr. F. G. FOSTER, Brockhampton, Havant, was awarded 1st prize. Mr. J. H. GOODACRE, gr. to Earl HARRINGTON, Elvaston Castle, Derby, being a very close 2nd.

The class for thirty-six Japanese blooms, distinct, brought six competitors, and was very keenly contested, Earl SPENCER carrying off the premier award with thirty-six perfect blooms; Messrs. J. R. PEARSON & Sons, Chilwell, Notts, were 2nd. Messrs. PEARSON were also 1st for twelve incurveds and twelve Japanese blooms followed in each class by Mr. J. H. GOODACRE.

For two bunches of black Grapes, Mr. J. READ, gr. to the Earl of CARNARVON, was 1st and Mr. F. SANDER was 1st for white Grapes. Apples and Pears were well shown, Colonel the Hon. S. COTTON, Somerford Hall, Mrs. Z. LLOYD, and Earl SPENCER taking chief honours. First-class collections of vegetables were staged by Earl SPENCER, Mr. J. READ, and Alderman T. C. MANDER.

Non-competitive collections of cut-flowers, plants, and fruit were very good, and welcome additions to the exhibition. Messrs. JONES & Son, nurserymen, Shrewsbury, made a superb display with cut-blooms of Cactus-Dahlias. Mr. J. E. KNIGHT, nurseryman, Wolverhampton, contributed a floral display, consisting of a chaplet of white Chrysanthemums and Orchids, an anchor of yellow Chrysanthemums, and some beautiful wreaths. Mr. ROBT. LOWE, seedman, of Wolverhampton, showed magnificent wreaths, crosses, and bouquets. Messrs. T. RIVERS & Sons, Sawbridgeworth, staged a fine collection of Apples and Pears. *G. W.*

PORTSMOUTH.

NOVEMBER 2, 3.—The committee of the Portsmouth Chrysanthemum Society, of which Mr. GILL is President, and Mr. W. H. BERRY is Hon. Sec., were fortunate in being able to hold their annual autumn show in the Portsmouth Town Hall, and no better place could be found for the purpose of a show. Unfortunately the weather was wet on the opening day, keeping many persons away. The display was the best they have had under the new manager.

Cut blooms were well staged. The principal class was that for forty-eight blooms, half to be incurved and half Japanese, and substantial prizes were offered. There were four entries in this class, making a good display. Mr. C. PENFORD, gr. to Sir F. FITZWYGRAM, Bart., Leigh Park, was 1st, owing chiefly to the superiority of his Japanese blossoms which were large and bright, and well arranged as regarded colour. The incurved specimens were irregular, some being especially fine, while others were weak. Mr. W. G. ADAMS, Clarendon Road, Southsea, was 2nd, with a weighty stand of well-finished incurved blooms, rather weak in Japanese varieties. Mr. FOSTER, Brockhampton nurseries, was a close 3rd.

In the twenty-four Japanese class, not fewer than eighteen varieties, Mr. J. AGATE, The Nurseries, Havant, was 1st with fine, fully-developed specimens of leading varieties. Mr. PENFORD was 2nd. In the class for twenty-four incurved varieties, Mr. PENFORD was 1st, with a fairly good collection. The amateurs staged creditable examples of Japanese, Mr. WHITE being the most successful exhibitor.

Growers in Portsea Island had classes set apart for them, which they worthily filled, and Mr. WHITE and Mr. ADAMS were the chief prize-takers; the former fortwenty-four Japanese, and the latter for the same number of incurveds.

Miss TURNER was 1st for table decoration, in which she employed bronze-coloured Chrysanthemums, though somewhat rather too freely. Messrs. W. TURNER & Sons were 1st for a bouquet of Chrysanthemums, with an arrangement superior to those usually met with. Mrs. G. H. MARSHALL, Southsea, had a gracefully decorated epergne, for which the 1st prize was awarded to her.

Groups of Chrysanthemums and foliage plants were of fair quality, Mr. AGATE being 1st with plants having good blooms, poorly arranged; Mr. FOSTER was 2nd. Messrs. BEVANS, of Langport, and HANCE, of Buckland, secured the leading awards for plants in the open and amateur classes.

ASCOT CHRYSANTHEMUM.

NOVEMBER 2, 3.—In very wet weather this Society opened its fifteenth show of Chrysanthemums, fruit, and vegetables, at the Grand Stand, Ascot, on the above date. Three classes were for groups, and two of them were well contested; the miscellaneous class brought two very moderate groups only.

For the best group of Chrysanthemums and foliage, mixed, there were four entries, and H. T. LESCHALLS, Esq., The Highams, Windlesham (gr., Mr. W. L. Farmer), won 1st prize. The best group of Chrysanthemums was shown by the Marchioness CONYNGHAM, The Mount, Ascot (gr., Mr. H. White).

The cut blooms in the open classes were poor, but greater competition was manifest in the district classes.

There were fine exhibits of fruit and vegetables.

PAISLEY HORTICULTURAL.

NOVEMBER 3.—The opening meeting of the third session of the Renfrewshire Gardeners' Mutual Improvement Society was held in the George Temperance Hotel, Paisley, on the above date. Mr. Robert Macfee presided.

Mr. S. Dewar, curator of the Glasgow Botanic Gardens, delivered an address on "Artificial Manures." He treated the subject in a scientific and practical manner, showing the necessity for plant-food, and how the ingredients of these manures supplied what was required for the sustenance of plants. He showed also that different plants required different manures, and one of the secrets of success in horticulture was to know what manures to apply. An interesting discussion followed, turning chiefly on the merits of farmyard and artificial manure. A Vote of Thanks was awarded Mr. Dewar.

PUTNEY, WANDSWORTH, & DISTRICT CHRYSANTHEMUM.

NOVEMBER 3, 4.—The Putney Society this year held its twenty-first exhibition in the Town Hall, Wandsworth, a building in every way suitable for a display of flowers. When the plants and flowers had been arranged, the picture was a very beautiful one, and the committee and hon. secretary, Mr. J. F. McLeod, are to be congratulated.

The Japanese blooms in the Commemoration Challenge Cup class, and in the class for twelve vases of Chrysanthemums, were of very high quality. Incurveds, with a few exceptions, were not so good, but this appears to be a common failing. There were berried, Chrysanthemum, and Primula plants, fruits, and vegetables, making altogether a very pretty exhibition.

The Tradesmen's Challenge Cup (value twenty-five guineas) was won by the exhibitor to whom it was awarded last season, viz., Mr. G. J. Hunt, gr. to PANTIA RALLI, Esq., Ashstead Park, Epsom, whose personal property it has now become. It is offered for the best sixty blooms, thirty-six Japanese, twelve incurveds, and twelve Japanese incurveds. His exhibit was certainly one of which the society had reason to be proud. The incurveds included a magnificent bloom of Duchess of Fife, of unusual size and fine build, being the premier incurved bloom in the show. The Japanese varieties were more even. The 2nd prize went to Mr. F. King, gr. to A. F. PERKINS, Esq., Oak Dene, Holmwood, Surrey. Among the Japanese in this collection was a perfect bloom of Phœbus, that won Mr. GEORGE'S prize for the best Japanese bloom in the show. Mr. J. F. McLeod was 3rd in this class, all three exhibits were very even, there being but few points between the 1st and 3rd prize collections.

The best collection of thirty-six blooms, with stems and foliage attached, disposed in twelve vases, was also from Mr. G. J. HUNT, and he had some very fine ones indeed, Duchess of Fife, Edith Tabor, Australie, Graphic, and Ed. Molyneux were the best. There were two other collections, but the 2nd prize was won by Mr. J. F. McLeod, gr. to J. P. MORGAN, Esq., Dover House, Roehampton, who had Sunflower in its best condition. There were three exhibitors.

In the twenty-four blooms (Japanese) class, the victor was Mr. J. Darg, gr. to J. HOOKER, Esq., Lombard House, Putney. He had nice fresh-looking, well-coloured, but rather small blooms, and included too many yellow and bronze-coloured flowers.

The classes for twenty-four incurveds, twelve, and six, were not remarkable. Mr. CHAS. BENTLEY had the best single-flowered varieties, the best Pompons, and best reflexed varieties.

Mr. S. MYNETT gained the special prize offered by Mr. J. F. McLeod, for an epergne of Chrysanthemum bloom, arranged with foliage and grasses, and a special prize offered by Mr. GEORGE STEVENS for a basket of Chrysanthemums and ornamental foliage.

Plants.—The 1st prize for a collection of Chrysanthemums in pots in not fewer than twenty varieties, was won by Mr. W. Tew, gr. to Mrs. E. GORDON, Westcombe Lodge, Parkside. He had a group after the usual pyramidal style of arrangement. Many of the Japanese varieties in the group were good, but the incurveds were scarcely represented.

Specimen-trained and bush-plants were exhibited in various classes, and 1st prizes were taken by Mr. French, gr. to Mrs. BARCLAY, Ambleside, Wimbledon Common; Mr. Jno. C. TWILLEY, 178, Merton Road, Wandsworth; Mr. CHAS. BENTLEY, gr. to Major BOSWORTH, Cedar Court, Roehampton, who won numerous 1st prizes; Mr. S. Mynett, gr. to J. CARLISLE, Esq., Ashburton House, Putney Heath; and ALFRED LANE, Esq., 244, Upper Richmond Road, Putney.

Fruit and Vegetables.—These exhibits were choice and of good quality. Mr. CHAS. BENTLEY had the best Black Grapes in Gros Maroc; and Mr. A. Methven, gr. to W. KEILLER, Esq., Fernwood, Wimbledon Park, the best white in Muscat of Alexandria. Mr. CHAS. TAYLOR had the best culinary and dessert Apples, and Mr. METHVEN the choicest Pears.

Miscellaneous.—Messrs. JAS. VEITCH & SONS, of Chelsea, exhibited a large group of choice plants. The Palms, Codiaums, &c., were relieved by a few greenhouse Rhododendrons in bloom, and Acalypha Sanderiana. Mr. ROBERT NEAL, of Trinity Road Nurseries, Wandsworth, also showed a group of plants. Florists' specialties were shown by Mr. GEO. STEVENS, Putney, Mr. W. HOLMES, Upper Richmond Road, Putney, and Messrs. J. WALBORN & SON, High Street, Putney, who had the best wreath and hand-bouquet in the competitive classes.

MAIDENHEAD CHRYSANTHEMUM.

NOVEMBER 3, 4.—The first show of this newly-formed society was held on the above dates in the spacious town hall, a building well adapted for the purpose. A very good schedule of prizes was offered, and although the competition in some instances was not so keen as might be wished, a very good show was the result.

In the largest open class, that for thirty-six blooms, twenty-four to be Japanese and twelve incurved, Mr. J. Fulford, gr. to F. D. LAMBERT, Esq., Moor Hall, Cookham, scored a somewhat easy 1st with superb flowers of both Japanese and incurved types. Conspicuous among the former were G. J. Warren, Mrs. J. Lewis, Australie, and Madame Carnot; 2nd, Mr. G. Lane, gr. to Miss RINGE, Highfield, Englefield Green.

For eighteen Japanese blooms, distinct, arranged on a space 5 feet by 3 feet, with the addition of any kind of foliage plants or foliage, Mr. Wood, gr. to the Rt. Hon. Lord Boston, Hedsor, Maidenhead, came 1st, with a very nicely arranged exhibit, the blooms also being very fine; 2nd, Mr. W. Davis, gr. to H. ADAMS, Esq., Cannon Hill. Mr. Fulford was again successful for twelve Japanese, with a very good stand.

For six Japanese of one variety Mr. FULFORD came a somewhat easy 1st, with grand blooms of Oceana. For twelve incurved blooms, distinct, 1st, Mr. D. HAYLER; 2nd, Mr. Butt, gr. to Captain FARWELL, Burnham Priory. With six fine blooms of Duchess of Fife, Mr. Wood was well to the fore for that number of incurved of one variety. Mr. Wood was also 1st for twelve Anemones, a very good stand. With a stand of Pompons Mr. HAYLER was 1st. The best Japanese bloom in the show was in a very fine flower of Mrs. J. Lewis, a large reflexed white, of fine substance, in Mr. FULFORD'S stand; and the best incurved, a fine C. H. Curtis, from Mr. G. LANE.

Mr. Wood was 1st for two vases of Chrysanthemums, containing six blooms, and for a basket of cut Chrysanthemums.

For a dinner-table decoration arranged with Chrysanthemum blooms and any sort of foliage, Mrs. HERRIN, Dropmore, was well 1st. Mr. E. F. SUCH was 1st for a hand-bouquet, and Mr. FULFORD for table plants.

Groups.—Some nice groups were arranged. For that composed of Chrysanthemums, Mr. DAVIS was a good 1st; and a very pretty group of miscellaneous plants came from Mr. Mr. FULFORD.

Fruit.—Mr. FULFORD was 1st for White Grapes, and Mr. GOODMAN 1st for Apples.

For a collection of vegetables, Mr. Paxton, gr. to Hon. C. J. IRBY, was 1st.

Non-competitive exhibits included a large stand of Chrysanthemum blooms from Mr. R. Owen; a quantity of floral decorations and cut Chrysanthemums in baskets from Mr. E. F. SUCH; floral decorations from Miss BROUGHTON; while Messrs. BUNYARD & Co., of Maidstone, sent a collection of some sixty varieties of Apples.

DEVON AND EXETER HORTICULTURAL FRUIT AND CHRYSANTHEMUM.

NOVEMBER 3, 4.—This was the 186th exhibition of this Society, and, on the whole, it may be regarded as a successful one. Fruit was well shown, the quality being rather above the average. In Chrysanthemums, the groups were better than usual; but in cut-blooms the competition was weak, and the quality lacking.

The cause of this falling off was mainly due to the Plymouth Exhibition, where the prizes are higher, being held at the same time, and, in a lesser degree to the shows at Dawlish, Newton Abbot, and Budleigh Salterton, being also held simultaneously.

CHRYSANTHEMUMS: CUT BLOOMS.

For thirty-six Japanese, distinct, H. HAMMOND-SPENCER, Esq., Teignmouth (gr., Mr. G. Foster), was 1st, taking also the National Chrys. Society's Certificate; Sir JOHN SHELLEY, Shobrooke (gr., Mr. R. Mairs), was 2nd. Mr. FOSTER had good blooms of Australie, Graphic, Beauté Grenobloise, Oceana, Simplicity, Lady Ridgway, Charles Davis, Madame Carnot, an even and fresh-looking, but not overgrown lot of flowers. Mr. Mairs showed Mrs. C. H. Payne, Charles Shrimpton, Lady Ridgway, National Chrysanthemum Society Jubilee, and Madame Carnot, very well.

In the eighteen Japanese, distinct, positions were reversed, Mr. MAIRS being 1st, and Mr. FOSTER 2nd. In this class Mr. Mairs again showed N. C. S. Jubilee and Lady Ridgway in fine form.

In the class for twelve Japanese, distinct, J. W. C. WASHINGTON, Esq., Dawlish (gr., Mr. W. Smeester), was 1st.

For six white, one variety, the Rev. E. E. HEATHCOTE REEVE (gr., Mr. T. Tucker), was 1st, with Madame Carnot, well shown; Mr. MAIRS being a close 2nd, with the same variety.

For the best six yellows, one variety, the Rev. G. LYONS, Teignmouth (gr., Mr. J. Stiles), was 1st, with fine blooms of Phœbus, to one of which was awarded the distinctive prize for "the best bloom in the show." It was a fine full bloom of great depth, although slightly pale in colour. Mr. MAIRS was 2nd with Edith Tabor.

In the class for six Japanese of any other colour, Mr. MAIRS was 1st, for blooms of Beauty of Teignmouth.

For incurved Japanese, twelve blooms, there was but one competitor, the Rev. G. LYONS, whose best blooms were Directeur Liebert, Oceana, Lady Ridgway, and N. C. S. Jubilee.

In the amateurs' classes, Mr. C. ELMS was 1st, and included Phœbus and Milano; Mr. C. HAM being a close 2nd, with Phœbus, Mons. Hoste, and Belle Mauve in very good form.

PLANTS IN GROUPS.

Chrysanthemums in pots, not fewer than eighteen varieties, in a circle of 10 feet diameter, quality of bloom to be the first consideration, effect next. W. BROCK, Esq., Exeter (gr., Mr. Rowland), took premier place, scoring chiefly in quality of bloom, showing brightness and diversity of colour, and good foliage; Lady DUCKWORTH, Exeter (gr., Mr. W. R. Baker), was a close 2nd. While lacking in quality of bloom, and perhaps having a preponderance of light colours, Mr. Baker's group had a superior finish, with many well-flowered plants round the edges not more than a foot high, while the highest ran up to 8 feet, with good foliage on them [all the way?].

For the best 8-feet-diameter-group, fifteen varieties, G. RANDALL JOHNSON, Esq., Heavitree (gr., Mr. G. Rogers), was 1st, and took the National Chrysanthemum Society's Certificate with a very good and uniform lot, beating another good group from T. KERKEWICH, Esq., Peamore (gr., Mr. J. Abrams).

In the Miscellaneous Groups there was nothing which calls for special remark, form and composition being on the same lines as in previous years. Mr. ROWLAND was 1st, and Mr. BAKER 2nd.

FRUIT.

Grapes.—Three bunches Black Alicante.—In this class the Rev. H. CLERK, Exmouth (gr., Mr. R. Pike), was an easy 1st, with three excellent bunches, form, size of berry, and amount of bloom being all that could be desired; Mr. G. W. MATHEW, of Exmouth, was 2nd. In Muscats of Alexandria matters were more even, Rev. H. CLERK being placed 1st, and Sir J. D. FERGUSON-DAVIE, Crediton (gr., Mr. W. Seward), 2nd.

In Apples, the competition was very close, the quality in all classes exceptionally high, and the entries numerous. As indicating the fine quality of the fruit, Blenheim Orange, which took premier honours at the Crystal Palace, was not placed here at all, and Ribston, which were 1st there, were 2nd at this show. For the collection of thirty varieties, fifteen dessert and fifteen culinary, all distinct, Sir JOHN SHELLEY was 1st, and won the Robert Veitch & Son's Silver Cup, with a splendidly coloured and typical collection of fruit, which included Baumann's Red Winter Reinette, Emperor Alexander, Mère de Ménage, Annie Elizabeth, Grand Sultan, Wealthy, Alexander Pippin, Adams' Pearmain, and Sturmer Pippin; Sir JOHN DAVIE was a close 2nd, with a splendid collection, which included Ecklinville Seedling, Red-ribbed Greening, Mère de Ménage, Alfriston, richly-coloured Blenheims, and others.

For five fruits, any other dessert variety, T. KERKEWICH, Esq., was 1st, with Claygate Pearmain. In the any other variety, culinary, Lord PORTMORE (gr., Mr. T. Slade) was 1st, with particularly fine examples of Alfriston; the 2nd prize going also to the same variety. For the best-flavoured, the premier place was, as usual, given to Cox's Orange Pippin, staged by J. H. LEY, Esq., Trebell (gr., Mr. J. S. Harding).

For the best single specimen, Sir JOHN DAVIE was 1st, with Blenheim Orange Pippin, one of the largest and handsomest specimens probably ever staged at Exeter.

Pears.—In Pears, premier honours went to Sir ARTHUR ACLAND, Killerton (gr., Mr. J. Garland), for nine varieties, six dessert and three culinary. Among his best were Beurré Diel (one of which weighed 23 oz.), Durondeau, Doyenné du Comice, Pitmaston, Catillac, and Uvedale's St. Germain.

In the six varieties class, Mr. GARLAND was again 1st, with good dishes of the same varieties. In each case Sir JOHN SHELLEY was a close 2nd.

In the any other dessert variety, Conseiller de la Cour was placed 1st; and for the best-flavoured, Sir JOHN SHELLEY secured 1st place with Doyenné du Comice. The prize for the single specimen, any dessert variety, went to F. R. HEARN, Esq., Alington (gr., Mr. G. Anning), who showed Pitmaston Duchesse in fine form.

Among the honorary exhibitors were R. ASHBY, Esq., Matford House (gr., Mr. Merritt), who staged a very fine lot of Orchids, including grand plants of Cattleya labiata autumnalis, Dendrobium Schroderianum, D. formosum giganteum, Lycaste Skinneri, Orlontoglossum Bictonense, Oncidium lychnorhynchum, O. varicosum, and Cypripedium Spicerianum. W. PRING, Esq., Miss DREW, and Mr. HENRY HILL were among the honorary exhibitors.

TRADE EXHIBITS.

These came from Messrs. R. VEITCH & SON; THE EXETER NURSERY CO.; JARMAN & Co., Chard; and G. C. SCLATER, Heavitree.

The Hon. Sec., Mr. G. D. CANN, and his assistant, Mr. F. W. PARKER, made admirable arrangements. A Correspondent.

PLYMOUTH.

NOVEMBER 3, 4.—The West of England Chrysanthemum Society held their annual autumn exhibition in the Guildhall on the above dates. The quality of the various exhibits was excellent, and in no particular behind those of former years. Cut blooms were undoubtedly the feature of the show.

For forty-eight, in twenty-four varieties, Mr. G. W. DRAKE, Cathay's nursery, Cardiff, was adjudged the premier award, with an almost faultless collection of blooms; Mr. G. Foster, gr. to H. HAMMOND-SPENCER, Esq., Glendaragh, Teignmouth, was a really good 2nd; Mr. W. H. FOWLER, Claremont, Taunton, a capital 3rd.

For twenty-four Japanese, the premier award was secured by Mr. G. Stiles, gr. to Rev. G. LYON, Teignmouth, with an imposing stand of blooms that showed great cultural skill; Mr. FOSTER was 2nd.

For twelve Japanese, Mr. G. H. Paddon, gr. to H. LEAH, Esq., Trevervene, was 1st in a spirited competition, with even, full-sized, well-coloured examples of popular varieties. The same exhibitor also secured the leading award in the class for six incurved Japanese.

Mr. Farmer, gr. to the Misses CAREW, Buckfastleigh, was 1st for six Japanese of any white variety, with grandly-developed blooms of Souvenir d'une Petite Amie; and Mr. PADDON was 1st for six Japanese of any other colour, staging magnificent blooms of Australian Gold. Mr. STILES followed with Phœbus, also in good trim.

For such an important society, the incurved varieties were indifferently shown and poorly selected; whilst, on the contrary, Anemone-flowered varieties were fairly well staged.

Good prizes were offered for the best general floral display, which formed an interesting one. Messrs. PERKINS, Coventry, 1st; Mr. J. ARNOLD, Stoke, 2nd; and Mr. J. TOMLINSON, Devonport, 3rd, making, with others, a capital show.

Groups of Chrysanthemums, confined to 100 square feet, with foliage plants intermixed, were arranged at the sides of the hall. In this competition, the prize-winners were Mr. J. WEBBER, Plymouth, 1st, with plants carrying good blooms, but not well arranged; and Mr. F. HODGES, Plymouth, 2nd, who had arranged an interesting and showy group of Orchids in front of the orchestra.

ISLE OF WIGHT.

NOVEMBER 5.—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on the above date.

Dr. J. GROVES, J.P., presided over a large attendance, and a lecture on "Four Years' Experiments with and without Artificial Manures" was given by Mr. F. W. E. SHRIVELL, F.L.S., of Tonbridge, Kent. At the close, twenty members were elected.

The ISLE OF WIGHT CHRYSANTHEMUM SOCIETY held their 14th annual exhibition at Newport on November 2 and 3. Cut blooms were satisfactory, but the plants were not so good as usual.

The RYDE CHRYSANTHEMUM SHOW was held on November 1 and 2, when an average exhibition was arranged.

* * We are compelled to hold over reports of Birmingham, Liverpool, and other important Chrysanthemum Exhibitions until our next issue.

THE APIARY.

Queen Introduction.—Weak stocks are troublesome to preserve, and rarely do much the following season; two or more lots may therefore be joined together, as directed in former pages. Some swarmed stocks will probably be found queenless; these should be re-queened at once, or united to other swarms wanting bees. Such admirable appliances, in the shape of introducing-cages for use in re-queening, are now sent out with queens by reliable queen-rearers, that we need only advise that no old-fashioned contrivance or out-of-date method of introducing be tried; this point attended to, failure in queen-introduction should be almost a thing of the past. When making the final examination of stocks for the year, note the general condition of the hive and its contents for future use, especially keeping a watchful eye for any appearance of disease. If brood is seen, do not trouble much to find queens. Before quilting down, scrape the tops of the frames well, removing every irregularity in the shape of propolis or bits of comb. Give a good puff or two of smoke to drive the bees down, and pass a hand-brush rapidly over the tops of the bars; any scrapings which fall down can be cleared away when cleaning floor-boards. We would here urge a precaution: do not interchange floor-boards indiscriminately—we have known disease to be spread in this way through the operator being unaware of the presence of foul brood in his apiary. Destroy any quilts propolised and worn-out, and arrange top-coverings of frames neatly, using some means to keep them down at the sides; a good chaff-cushion laid on quilts makes a better cover than several layers of carpet only. *Expert.*

NOTICES TO CORRESPONDENTS.

APPLE: *Miss Phillips.* The twin-fruits of Mère de Ménage are not uncommon. Twin-fruits generally are the results of the fusion of two blooms at a very early stage of growth.

BAMBOO-TREE: *L.* If anything is entitled to be so called, it is the Banana (*Musa*). What you send is a leaf of *Polygonum cuspidatum*, a Japanese "knot-weed." The popular name you cite has the usual lack of appropriateness, seeing that the plant is neither a Bamboo nor a tree. The resemblance to a Bamboo is of the most superficial character.

ECHINOPSIS: *A. Cobbold.* The appearances are due to bruises from blows, &c. The plant is healthy.

FOREIGN NAMES: *F. C. V.* The rules of pronunciation in French, German, and Italian, the languages mostly used in giving the names to Chrysanthemums, do not admit of explanation in the space at our disposal.

CHRYSANTHEMUM BLOOM: *J. H.* The bloom has not been dyed. It is the variety Chas. Davis, a sport from Vivand Morel.

CHRYSANTHEMUM SPORT: *J. S., Lewisham.* Submit same to one of the trade growers, who will soon tell you if it be worth anything. Providing it is of distinct colour, any sport from Vivand Morel is valuable, the type being so good.

GOOSEBERRY AND CURRANT BUSHES: *E. G.* If tomites and bullfinches are not troublesome, you may prune the bushes at this season; otherwise leave the pruning till the buds begin to swell. Could not your gardener be sent to some good garden in your neighbourhood, say, Warwick Castle, Stoneleigh, or some market growers, and study the methods practised by the gardeners?

LAWN: *Perseverance.* We think that you fail to have a good lawn because of the porosity and poverty of the soil. You should clear away the old turf, or dig it in after dressing the ground with a good proportion of fresh loam, a sprinkling of quick-lime, and a few wheelbarrow-loads of stable-dung. Your land, or at any rate, the underlying stratum being gravelly, water passes very quickly, and with it much of the manurial agents in the soil; and a dressing of heavy loam will partially correct this. The grass sent is *Agrostis stolonifera*, a not naturally bad grass, but of little use by itself. Purchase the finest lawn grass-seeds from a good house, or the best turf obtainable. Turf may be laid at any time when there is no hard frost. Seeds may be sown now, the ground being warm and moist; or in April.

MICROSCOPE: *J. H. D.* We recommend you to get a good stand first of all, to this you can add luxuries afterwards. A good stand with a low eye-piece, and two object-glasses of 1 inch and $\frac{1}{2}$ inch, can be had for about 5 guineas, and will be enough for a beginning. You will not be able to make much progress by yourself, so that it will be best for you to attend some class, where you can obtain practical instruction in the way of using the instrument.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—*C. J. W. Pears:* 1, Beurré Diel; 2, Bergamot d'Esperen; 3 and 4, Louise Bonne of Jersey.—*Morden.* 1, Queen Carolae; 2, Cellini.—*W. G., Sorley.* 1, Beurré Bos; 2, Marie Louise; 3, Baronne de Mells.—*Cecil Perceval.* 1, Duck's Bill; 2, King of the Pippins; 3, Margil; 4, Gooseberry (?); others not recognised.—*J. Reynolds.* 1, Fearn's Pippin; 2, Alfriston; 5, Duck's Bill of Sussex.—*Malvern.* 1, Royal Codlin; 3, Lord Derby; 4, Pitmaston Pine-apple; 5, Small's Admirable; 6, Urbanist.—*P. R. Apple,* New Hawthornden; Pear, much bruised, cannot be determined.—*J. B. Davies.* 1, Mère de Ménage; 2, Catshead.—*H. A.* 1, Hormead's Pearmain; 2, Scarlet Nonpareil; 3, Braddick's Nonpareil; 4, Cox's Pomona; 5, Mère de Ménage; 6, Catillac; 7, Duchess d'Angoulême.—*Beatrice, Hurst Place, Beesley.* 1, Scarlet Nonpareil; 2, Waltham Abbey Seedling; 1, Golden Reinette; 3, French Crab;

4, Nonsuch; 5, Galloway Pippin.—*Philomathus.* 1, small Vicar of Winkfield; 2, Beurré d'Anjou; 3, and 4, not recognised; 5, Beurré Clairgeau; 6, Scarlet Nonpareil.—*Cydonia.* 1, Cox's Pomona; 2, Braddick's Nonpareil; 3 and 5, not known; 4, King of the Pippins.—*Sylvanus Fox.* 1, Annie Elizabeth; 2, Blenheim Orange; 4, Tower of Glamis; 5, Royal Codlin; 6, Blenheim Orange.—*A. W. Apple Stürmer Pippin.*

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*A. M.* *Staphylea pinnata.*—*P. M. M., Dumbarton.* 1, *Oncidium O'Brienianum*, Rehb. f.; 2, *Catasetum fimbriatum*,—*C. E., Abergavenny.* 1, *Codiaeum Queen Victoria*; 2, *C. Mortii*; 3, *C. Evansianum*; 4, *C. angustifolium*; 5, *C. Johannis*; 6, *C. irregulare*; 7, *C. chrysophyllum*; 8, *C. variegatum*.—*W. M., Surrey.* *Catasetum cristatum*, *Botanical Register*, t. 966.—*Alpha.* If you are in a neighbourhood where fogs prevail at this season, it would account for some of the buds of your *Odontoglossums* turning yellow. Otherwise, it might be from something causing an unhealthy atmosphere in the house. Fresh paint will do it, or stagnant moisture.—*J. L.* 1, *Cupressus Lawsoniana*; 2, *Juniperus chinensis*; 3, *Cupressus Goveniana*; 4, dwarf form of common Spruce, *Picea excelsa*; 5, *Liquidambar styraciflua*; 6, *Pseudotsuga Douglasii*, the Douglas Fir.—*J. S.* Send them to a trade grower, who will compare them with those in his collection.—*J. P.* *Juglans nigra.*—*Ellen W.* *Gomphocarpus fruticosus*.—*W. B.* *Cupressus sempervirens*, the common Cypress Salvia.

NON-FRUITING OF VANILLA: *A. M.* The flowers of this species of Orchid have in this country to be fertilised by removing the rostellum by means of a pair of pointed forceps, which must be introduced sideways between the anther and the stigmatic surface, so as to pull it away in the direction of the latter. The pollen-masses are then drawn out, and pressed down on the latter, and the operation is complete. To enable you to better understand the operation, see our issue for October 30, 1897, p. 307, for figures.

PELARGONIUMS: *Novice.* If the shoots are much crowded, you might remove the weaker ones entirely; but the less mutilation at this season, the better. Keep them rather short of water at the root—that is, afford water only when the soil has got very dry. Pruning can be performed in March, or earlier if you put them in heat.

ROSE LEAVES DROPPING: *H. M. S.* No fungus can be found on Rose leaves. If the trouble occurs again, you might send fresh specimens.

VARIEGATED ELM: *J. S.* The shoots sent are taken from a form of *Ulmus campestris*, and may be a natural sport, therefore not a worked plant; but in any case a tree having a circumference of 5 feet would show little mark of having been budded or grafted if the stock and scion made equal growth, or the point of union was below the soil. The propagation of varieties is performed by shield grafting on seedlings of the common Elm in the month of July, and cleft grafting in March and April, close to the ground, or high up as standards. It is safer not to cut through the albumen, or remove the wood, if any should come away with the shield.

COMMUNICATIONS RECEIVED.—*C. Mathews.*—*Saturday Evening Post.*—*La France.*—*L. O. A.*—*W. B. H.*—*Otto Forster.*—*F. B.*—*S. P.*—*F. W.*—*M. D.*—*Dalkeith.*—*W. G. S.*—*Leeds.*—*Lady Nias.*—*Prof. Conwentz.*—*W. B.*—*G. O.*—*W. W.*—*Anglo-Scott.* next week.—*V. D.*—*F. Batho.*—*E. P.*—*Ghent.*—*M. Chappellier.*—*W. L. H.*—*Burn.*—*E. M.*—*J. Olbertz.*—*E. C.*—*W. K.*—*C. D.*—*Perth.*—*De Last.*—*G. E. M.*—*Expert.*—*W. H. D.*—*W. Chitty.*—*J. Proctor.*—*A. B. S.*—*W. M. G.*—*J. C. M.*—*A. J. G.*—*R. C. W.*—*Northleigh.*—*H. F.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*J. R., Menabilly.*—*Dr. Cattie.*—*N. W.*—*H. J. J.*

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—*The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,*

MORE THAN DOUBLED,
and that it continues to increase weekly.
Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see p. x.)



THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 19, 1898.

THE PRINCIPLES AND PRACTICE OF BULB-GROWING.

AS the thoughts of the cultivator are now directed largely to the care and attention of that most interesting and important group of garden gems known as bulbous plants, it will be well to consider something of the principles underlying their life history. Perennial plants, exclusive of shrubs and trees, are able to persist and live on from year to year by means of an underground extension of their stem, which is thickened and swollen owing to its becoming converted into a storehouse of nutriment, manufactured and sent down chiefly by the leaves; the scales, or subterranean foliar appendages, or even the enlarged bases of the lowermost aerial leaves, may also take part in this function of a food-storehouse. From these perennial underground stems a continuous series of buds arises year by year, developing into the sub-aerial stems bearing the leaves and flowers. In most dicotyledonous plants these underground stems are generally structures more or less elongated either in a horizontal or vertical direction, and swollen as compared with the aerial stem; they are termed rhizomes or root-stocks. Such are also found amongst monocotyledons, as in the Iris, Solomon's Seal, Lily of the Valley, Black Bryony, Sedges, grasses, &c. In some plants the rhizome becomes very much swollen and characteristic in shape, as in the Potato, Jerusalem Artichoke, and Orchis; in many foreign Orchids the swollen portion of the stem, which serves as the storehouse of food, is aerial and green in colour, and known as a pseudo-bulb.

Coming now to those plants which are comprised in the gardeners' category of "bulbous plants," and which also possess this underground extension of the stem, there is the order Iridaceæ, which contains the three genera, Iris, Crocus, and Gladiolus. The underground stems of these plants are called corms, which in shape are rounded and bulb-like, but are not true bulbs, for they have a smooth exterior, and are devoid of scales, bearing foliar organs only at the apex when they sprout. Only certain species of Iris produce such corms, such as *I. reticulata*, in which that organ is covered with a beautiful fibrous network, and the Spanish Iris. In the order Liliaceæ is another corm-bearing plant, the Meadow Saffron, *Colchicum autumnale*.

It is a curious fact that the true bulbous plants belong exclusively to the monocotyledonous class, and principally to the order Liliaceæ. The "bulb" is a short extremely reduced underground stem, bearing great numbers of densely-packed foliar appendages, or scales, on its upper surface, and numbers of adventitious roots below. From the central part of its upper face arises, at the proper

season, the flower, or the aerial stem. In these plants it is the scale-like foliar organs, and not the stem itself, which are the store-houses of nutriment for the whole organism, and so thick and fleshy in texture have these scales necessarily, from their function, become, that they are scarcely recognisable as foliar organs; yet they are but the ordinary leaves of the plant, modified to subserve a special purpose in the economy of that plant's existence. Such bulbous plants are the Hyacinth, Tulip, Lily, Onion, Squill, Glory of the Snow, Star of Bethlehem, Snake's-head Fritillary, Crown Imperial, Daffodil, Snowdrop, Snowflake.

The bulb is a complete individual in itself, and so concentrated are the life-forces within it, owing to the great accumulation of compactly-stored food-substances in the tissues, that it may be removed from its natural environment and dried, just like a seed, without being in the least devitalised. For the power is ever latent within it of producing leaves, flowers, and roots whenever a favourable opportunity shall arise.

Having reached a certain age, the bulb may propagate itself by means of ordinary stem-branching, i.e., that in the axil of one or more of the foliar organs, or scales, a branch in the form of a swollen bud, may arise, developing fleshy appendages, or scales, like that of the main axis, until, eventually, it grows into a bulb like its parent, which latter decaying, it eventually replaces. Great numbers of such young bulbs may be produced by the parent; obviously a most convenient and rapid method of propagation.

In the cultivation of bulbs, the first consideration of all is the kind and quality of the soil they require. This must, naturally, primarily be determined by the character of the soil in the plant's own native habitat. For Tulips and Hyacinths it has been found that a light soil, more or less sandy in nature, is the most suitable, for the tissue of the bulb being so fleshy in character, and the scales so compactly arranged, there would be a tendency for these latter to rot if the soil were too moist and heavy. Hence we find most bulbous plants in Nature occurring in a light, porous soil. This soil, in cultivation, in order to improve on the quality of the flowers as they are produced in Nature, has, of course, to be considerably enriched by manure, cow-dung being that chiefly used, for otherwise there would not, in the soil itself, be sufficient nutriment forthcoming to enable the plant to build up the wonderful, richly-coloured, and richly-scented blooms we know so well, and the abundant and healthy foliage. The bulb farms of Holland and Lincolnshire afford as suitable spots for the cultivation of these plants as can be imagined, for the soil is light in texture, the land is perfectly flat, and owing to its low level, a uniform state of moisture prevails in the soil.

Narcissi require a rather stiffer soil, and less manure, the ammoniacal properties of which are deleterious to these plants. They also prefer more shade than Hyacinths and Tulips; our wild Daffodils are usually found growing in woods or on grass under trees.

The proper season for planting bulbs is that in which they are in a dormant condition, when growth of every kind has ceased, and the bulb is in a thoroughly ripe state, and ready to commence active growth anew, when favourable conditions again recur. But, as the season of flowering for the different kinds of bulbs varies, so must, to a certain extent, the time of planting. The very early-flowering kinds,

such as Snowdrops and Crocuses, must be put in the ground quite early in September at latest, and this for the reason that they may have ample time to establish themselves in the soil by emitting roots in good time for the next flowering period. For the later-flowering kinds, like Hyacinths and Tulips, there is a wider margin left for the proper establishment of the bulbs in the soil before the necessity for flowering supervenes. It is obvious that the soil where the bulbs are planted must be in a dry and porous condition, for if it be wet and sticky, rotting of the roots might ensue as fast as they are emitted, if not of the bulb itself.

The bulbs of Lilies require to be planted as soon after they are ripened as possible, as if stored too long out of the ground on the shelf, they dry up. The reason for this is found in the fact that they possess a structure different from that of other bulbs; instead of the tunicated character of the bulbs of the Hyacinth and Tulip, in which cuticularised coloured scales completely cover the inner fleshy ones, these latter in the bulbs of the Lily are quite exposed, so that there is here no modification in texture of the outermost scales for the benefit of the inner, and hence the bulb cannot so long withstand exposure to dry air.

The depth at which bulbs should be planted in the soil varies according to their size; the rule is to plant at about twice the depth of the bulb itself. If not planted deep enough, they will be subjected to the dangers of mice, wet, and frost, and the bloom will be injured. If planted too deep, they will be strained and exhausted in trying to reach the surface of the soil, and the bloom will be so much the weaker. Great care should be taken that the bulb be not left hanging half-way down the hole that has been made for its insertion in the soil, for in such case the roots, on being emitted, would tend to get dried up and die; neither should the soil below the bulb be pressed down in any way, as by pushing the bulb into the soil instead of preparing a hole for it, the roots might be prevented from or greatly delayed in penetrating. A good method of planting is that adopted by the Dutch, who remove the top layer of soil from the first bed, and carry it to the other end of the field; then, placing the bulbs in position at the corners of squares marked out with a rod, they are covered by the soil taken off the next succeeding bed, and so on through the entire field. In this way all the bulbs are securely planted at a uniform depth; whereas, by the method of making holes, there is always a likelihood that some bulbs will be inserted at greater depths than others. *W. C. Worsdell.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

EULOPHIA GUINEENSIS.

A STRONG plant of this rarely-seen Orchid is now bearing four spikes of flowers in the Orchid-house at Kew. It was received a few days ago from Mr. Johnson, Curator of the Accra Botanic Station, who placed it in a Wardian-case in flower, and it has continued to bloom during the voyage from the West Coast of Africa. The spikes are 2 feet high, and each bears about a dozen flowers. The pseudo-bulbs are clustered, conical, an inch long; the leaves a foot by 4 inches, and the flowers are about 2 inches across, with brownish sepals and petals, and a Miltonia-like lip, which is wavy, ovate, over an inch long, coloured lavender-purple, with streaks of a darker shade. This plant used to be grown well by the late Mr. Spyers at Burford Lodge, where, he said, it had always been a favourite, producing magnificent spikes of bloom, which lasted six or eight

weeks in perfection during August and September, under treatment similar to that usually given to *Phaius Wallichii*. It is worth importing in quantity. There is a poor figure of it in the *Bot. Mag.*, t. 2467; and a much better one in *The Garden*, xix., 332.

DENDROBIUM AQUEUM.

Whilst albino varieties of Orchids are sought after and treasured by the connoisseurs, a species which produces attractive pure white flowers, and is easily managed, has apparently few admirers. Such a plant is *Dendrobium aqueum*, which is common in the south of India, imports well, and, when grown along with *D. nobile*, flowers profusely in October and November. It has the general appearance of *D. nobile*, but the pseudo-bulbs are more succulent, and the flowers are produced in pairs or triplets from the axils of the green leaves; they are 2 inches across, milk-white, with a faint tinge of yellow on the crest of the labellum. There is a good figure of it in *Botanical Magazine*, t. 4640, and another in *Paxton's Flower Garden*, ii., 175, where it is called *D. album*. Good examples of it are now in flower in the Orchid-house at Kew. W. W.

THE ROSARY.

AUTUMN NOTES.

THE difficulty of saying what ought to be done in the Rose-garden in autumn, is in many years increased by the peculiar character of the season, and I do not remember any year when the difficulty has been greater (at least in certain parts of the kingdom) than this year. In this south-eastern portion it was till lately impossible that anything could be done in the way of planting owing to the extreme dryness of soil. A pathetic appeal was put forward by Mr. Bunyard of Maidstone, one of the largest fruit-tree growers in the kingdom, telling his customers how impossible it was that he could at that time execute any orders, and asking them to have patience with him, and not to do what must subsequently result in loss. Then, again, one of the largest Rose-growers in East Anglia said it is impossible to lift any plants until they have had forty-eight hours' good rain; while from others in the west, and where there has been abundance of rain, the opposite story is told. One grower writing to me says—"Our ground is so saturated with moisture, that it is impossible to do anything in lifting and thinning-out our plants! The extreme drought which we have experienced in the eastern parts of the kingdom has had one beneficial effect—it has thoroughly ripened and matured the wood, and there is not that very free growth at this time of the year, which although it may give us additional flowers, is in the judgment of most Rose-growers not conducive to the vigour of the plant, nor is it favourable to the formation of new plantations where these are required. It is impossible to trench the ground when in many cases the earth runs off the spade like sand; while in heavy ground, such as the Rose most delights in, digging is impossible.

So much has been written upon the subject of planting, it is hardly necessary to say much upon the routine of the necessary work; some points in connection with it, may be well to revert to. One notices that there are efforts made in cross-hybridisation to introduce new races of Roses. I confess that, in some respects, I am afraid of this movement. People may decry our fine exhibition Roses on which growers have for so many years expended their energies and lavished their affections, and yet I think it may fairly be questioned whether any amount of garden Roses would have helped forward the popularity of the flower as our exhibition Roses have done. We are a people of extremes, but I am convinced that if we transfer our affections and our exertions from the exhibition to the garden varieties that there will be a lamentable falling-off in Rose culture. These garden Roses are not for the owners of small gardens, and I think this fact is evidenced by the way in which the prizes for them are awarded; many of them are also only summer-flowering varieties, and although it is true that many of the H.P.'s do not always give us second flowers, yet there is always

a chance of their doing so. I would strongly urge, then, that in planting new beds, the old-established favourites be not left out in order to make way for the so-called garden varieties. Another feature in present-day Rose culture is the desire to group Roses of one variety together; this, no doubt, where there is space, forms a very pleasing feature in the garden, but there must be space if it is to be done effectually.

In the selection of Roses for this purpose, care ought to be taken that the Roses chosen should be those that are likely to give an autumnal bloom; of course, most of the Tea-scented Roses are of this character, and it is one of their great recommendations. Right up to the time when frost comes, a grower may depend on his Teas giving him some exquisite flowers, but they mostly lack colour, and therefore in many of the beds Roses of pink and red shades ought to be selected, such varieties as

grower must judge for him or herself what Roses they will discard from their beds. There are two things on which I should be inclined to lay great stress—one is, to avoid all known to be indifferent growers. I know that this will lead to the discarding of some most beautiful varieties, especially among the dark Roses. It may seem rather hard to put a ban upon such flowers as *Horace Vernet* and *Louis Van Houtte*; but what is the use of recommending them to a beginner? They will probably give some grand blooms for the first year, and then disappear or dwindle down into miserable plants. We have others of equally brilliant colouring which will grow, and continue doing so from year to year, and although an exhibitor cannot dispense with these varieties (for the former takes very often the Silver Medal for the best Rose in the show), yet to a non-exhibitor it will be a continual source of grief and disappointment.

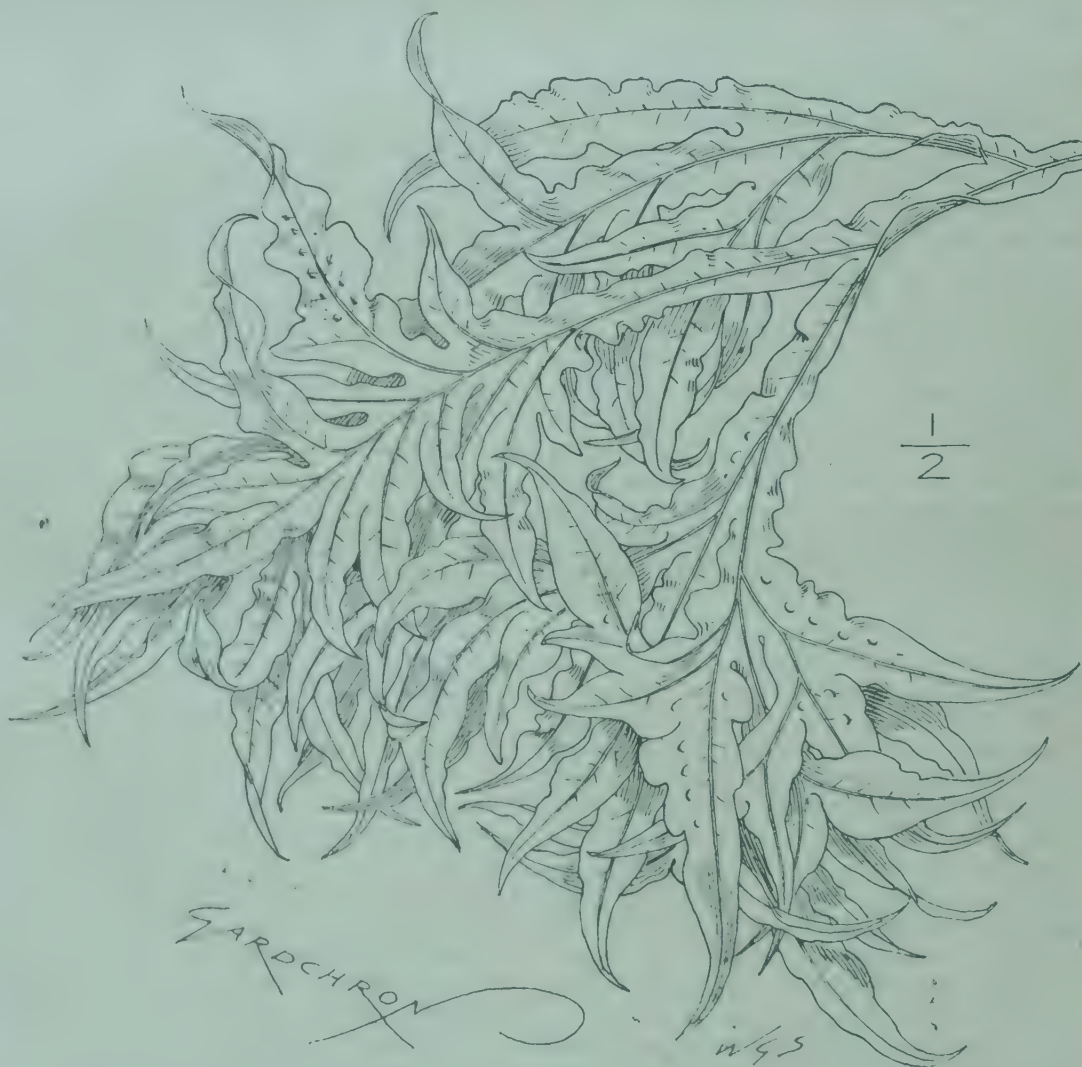


FIG. 105.—POLYPODIUM GRANDE NIGRESCENS: A SUPPOSED HYBRID BETWEEN THE TWO FERNS FIGURED ON P. 363.

(For description see column c, p. 356, *Gardeners' Chronicle*, November 12.)

Mrs. John Laing, Mrs. Sharman Crawford, Captain Hayward, Gen. Jacqueminot, Gloire de Margottin, and others which growers may have found giving them autumnal blooms in their own locality, should be added. Mistakes may be made, as when a friend thought he was going to do great things, and made a large bed of *Maréchal Niel* on his lawn; he had not remembered that the flowers did not keep themselves erect, but hung down their heads, so that not a bloom was to be seen, and the bed disappeared in the following autumn.

Of course, when the work of planting in the autumn is considered, one most important feature is what alterations are to be made in the varieties to be discarded from or added to the collection. It is a somewhat curious fact that some Roses thrive better in some localities than others. I have known, for instance, that complaints have been made of some Roses as to their growth, which other rosarians have described as most vigorous; and therefore each

Another point on which I should be inclined very strongly to insist, is to do away with scentless Roses; what is called the *Victor Verdier* race contains many flowers of exquisite form and colour, but they are deficient in that one of the first requisites of a good Rose—delicious perfume. Dark Roses into whose constitution a strain of the old Damask has entered, and those light-coloured Roses which are derived in some way from the old *Centifolia* or *Cabbage Rose*, have both given rise to varieties of excellent perfume; but the progeny of *Victor Verdier* is scentless. They are, many of them, of pleasing shades of colour, and of perfect shape, and it may seem rather hard to exclude them, but I think that other varieties having the same recommendation, to which perfume is superadded, may be found in all our catalogues.

There is another class of Roses to which some of us object, on account of their size; one of the most recent of these is *Gustave Piganneau*. I know it is a very fine Rose, and has often won a medal; but I do

not care for it, any more than I do for Antoine Mouton or Paul Neyron. The latter has one quality which perhaps may lead to its retention in the garden, and that is, that it is a very persistent autumn bloomer, and is more especially in favour with foreigners on this account.

There is always a desire amongst Rose growers to know what novelties they should introduce in their gardens; this is sometimes a difficult matter to decide, the number of those announced does not diminish, but rather increases. For many years we have had a large number from France, sometimes about fifty or sixty, the merits of which we are obliged to take on the credit of their

of Cheshunt, have their fine large hybrid perpetual, the Rev. Alan Cheales: the colour is pure lake, and it is very free-flowering, and well adapted for massing; Dawn, a garden Rose of very vigorous habit, a seedling of Caroline Testout, crossed with a Bourbon; and Royal Scarlet, a single hybrid perpetual of a most brilliant colour.

Messrs. William Paul & Son's Empress Alexandra of Russia is one of the most brilliant coloured Tea Roses that we have, it combines many of the peculiar shades to be found in this section, and for those who admire dark Teas it will be indispensable. Enchantress is another very beautiful Tea, and will be much valued for its decorative character. Messrs.

RIVER-SIDE OSIER-BEDS.

HAVING recently visited an area on the Thames Bank given up to the cultivation of Osier coppice, I have sent these few notes for the guidance of any who may care to take up what is really a paying industry in a small way.

Area and Soil.—This area is $1\frac{1}{2}$ acre, and is rectangular in shape. The subsoil is London clay, covered with gravel, the upper soil being a fine sandy loam. No artificial manuring is required, as the ground is subject to frequent floodings, by which nourishment of various kinds is brought down—lime, potash, nitrogenous matter, &c.

Species.—There are two species of Osier here—

(1). *Salix viminalis* (common Osier). The leaves are elongated, the bark grey. This species does well for coarse wicker-work, and is the more prolific of the two.

(2). *Salix purpurea* (Spanish Osier).—The leaves somewhat resemble those of the Peach, and easily distinguish it from the common Osier. The bark is reddish-purple. This species is better adapted for fine wicker-work.

Dangers to which the Crop is Exposed.—Insects constitute the chief danger. A destructive leaf-roller—*Earias chlorana*—is found, which often eats into the centre of the leading shoots, and destroys the growth of the Willows.

Weeds are also a source of trouble; among these may be mentioned *Convolvulus major*, which has long underground rhizomes, and comes up year by year. This and the wild Hop are rather plentiful; both are close climbers, and twine themselves round the Osier stems, choking them to a considerable extent, and in many cases leaving a spiral wound along the course of their growth. Twitch-grass, Thistles, and Nettles, also grow rank, the latter often to a great height. However, if the area were weeded, say twice a year, there would be small chance of these intruders making much headway.

Method of Treatment.—The Osiers are all planted from slips, which must be well-grown shoots with full leaders, otherwise they would be dominated or suppressed before they could get a footing for themselves. In newly-formed beds smaller slips would suffice. Young roots come out from the lenticels. After two years, when they are 9 or 10 feet high, the stems are cut over at about 1 foot from the ground, the stumps left forming the "stools" for the coppice-shoots. The stools die after seven years, when they are dug out, and replaced by fresh ones. Thus, a seventh part of the area has to be planted every year.

Yield.—The slips are planted $2\frac{1}{2}$ feet by $2\frac{1}{2}$ feet apart, so that we get $\frac{48,560}{2\frac{1}{2} \times 2\frac{1}{2}} = 6969$ (say 7000) stools in an acre. If the stools give an average of ten wands apiece, we shall get 70,000 wands per acre. In France they are often grown much closer than this. These shoots or wands are tied up in bundles called "bolts." Each bolt contains about 100 wands, and is worth 2s. This gives us about £70 gross return per acre.

Remarks.—Of course, if the shoots are not cut over, they grow into standards. There are many such along the Thames banks, but they do not concern us here. This cultivating of Osier coppice is a good, sensible way of utilising what would otherwise be practically useless ground, and is certainly to be recommended. G. E. M.

TREES AND SHRUBS.

A NEW WITCH-HAZEL (*HAMAMELIS MOLLIS*, Oliver).

AMONG the numerous dried specimens of plants sent to Kew in recent years by Dr. A. Henry from Central China, was a new species of *Hamamelis*, collected by him in 1887, in the Hupeh province. This was named *H. mollis* by Professor Oliver, and was described and figured in the *Icones Plantarum*, t. 1742. From the first the species has been recog-

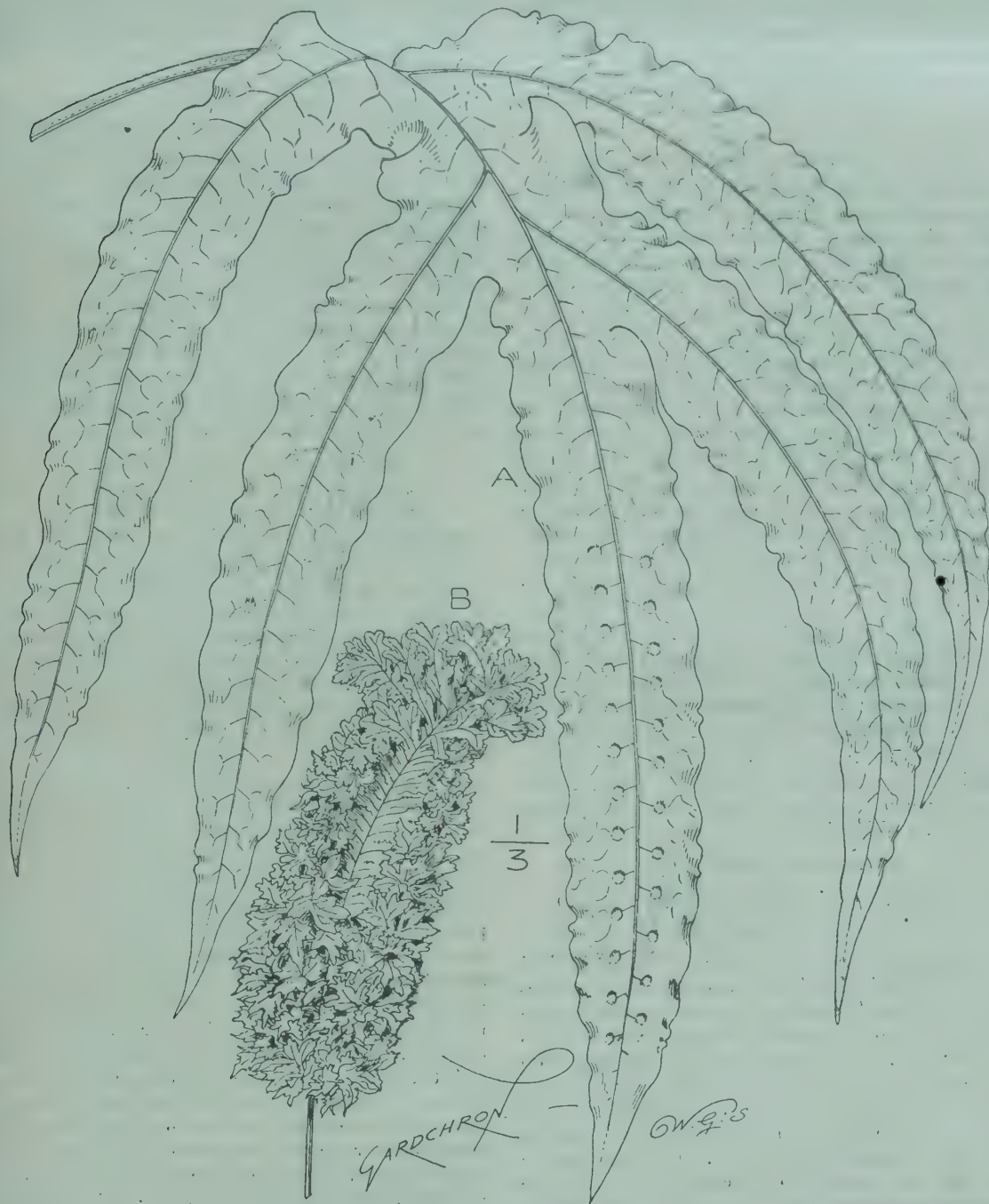


FIG. 106.—A, *POLYPODIUM NIGRESCENS* (SUPPOSED FEMALE); B, *POLYPODIUM VULGARE* VAR. *GRANDICEPS* (SUPPOSED MALE PARENT OF THE FERN FIGURED ON P. 362).

(For description see column c, p. 356, *Gardeners' Chronicle*, November 12.)

raisers or introducers; very little is known about them, and unless some English Rose grower has seen them, it would be unwise to recommend them. Beside these, we have an increasing number of home-raised flowers, of these we know more, as most of them have appeared at some one or other of our exhibitions—thus, from Messrs. Cooling & Son we have announced their beautiful Gold Medal Garden Rose, Purity, which is likely to be a general favourite. Messrs. Alex. Dickson & Sons have their fine Hybrid Tea Killarney, a beautiful Rose, with well-pointed bud, flesh-coloured, shaded with pink; Beryl, a Tea Rose of vigorous habit, yellow, with long bud, and highly perfumed; Mrs. Edward Mawley, another Gold Medal Rose, pink, shaded with fawn. Messrs. Paul & Son,

Frank Cant & Co.'s Mrs. Frank Cant is another remarkable flower: it is a beautiful clear pink, the edge and back of the petals silvery-white, large in size, and very vigorous in habit.

I have only enumerated some of the many candidates for favour, but I think these may be depended upon. I have said nothing with regard to those who are commencing to grow Roses, because there are so many lists put forth, so that it is not difficult to choose, but unquestionably the safest guide will be the list given in the National Rose Society's *Hints on Planting Roses*, for it combines the experience of a large number of Rose growers, both amateurs and professionals. *Wild Rose*. [This article was unavoidably delayed. ED.]

n'ed as a desirable one for cultivation, and now, fortunately, it proves to be in cultivation in the Coombe Wood Nursery. It has been there for some years, and the original plant is now a bush about 2½ feet high. This Witch-Hazel is very distinct, and can be distinguished at a glance from all the others by its leaves, which are not only the broadest and largest in the genus, but are also differently shaped, and covered beneath with a dense, felt-like mass of stellulate hairs. The upper surface is also slightly pubescent. The leaf is 4 to 5 inches long by 2½ to 3½ inches broad, the base being obliquely cordate, and the apex cuspidate. The margins, as in the other species, are sinuate and minutely toothed. I have not seen flowers on living plants, but the Herbarium specimens show them to be of much the same character as those of *H. arborea*. The petals are about ¾ inch long, thin, narrow, and wavy; according to the statement of the staff at Coombe Wood, the flowers are of a brighter shade of yellow than those of any other *Hamamelis*. Dr. Henry describes it as "a tree, 10 feet to 30 feet high."

During the last few years the Witch-Hazels have become very popular, more especially those from Japan. They are amongst the first shrubs that flower after the New Year, and the peculiar beauty and structure of their blossoms, as well as their perfect hardiness, give them a place among the very best of early-flowering shrubs. Such an addition to them as this new Chinese species, which also blooms in early spring, is, therefore, sure to be welcome.

The following species and varieties are now in cultivation, and all of them, even the old autumn-flowering American species, are worth growing:—*H. arborea*, *Masters*, Japan; *H. japonica*, *Siebold et Zuccarini*, Japan; *H. j. var. Zuccariniana*, Japan; *H. mollis*, *Oliver*, China; *H. virginica*, *Linn.*, East North America. *W. J. Bean*.

TAXUS ADPRESSA.

For small gardens especially, the above-named variety of Yew is very useful. One great advantage is, that it does not so soon outgrow its position as the common Yew. Its foliage is of a darker green than the last named one, and in general appearance it is very distinct in any shrubbery. There is a variegated form of it in commerce named *T. adpressa aurea*, which is constant in character, and in most soils is a good grower. Personally, I confess to a strong liking for Yews generally. They are of such an enduring nature. The periodical "zero" winter which mows down other evergreens, always leaves Yews unscathed. After the one we had in 1879, the only evergreen-shrubs uninjured here were Yews and Box. I am led to penning this note after admiring a fine specimen of the Yew in question growing in the grounds here. It covers a space about 7 yards in diameter each way; its height being about 8 feet. It has been planted about sixty years. Had it not been somewhat overshadowed by a group of forest trees, no doubt it would have been much larger. The semi-drooping branchlets so freely sprinkled on their under surfaces with bright coral-like berries, are, to say the least, very pretty. Those of your readers who have not already grown this Yew in their gardens, would not, I feel sure, regret adding one or more of it to their collection of evergreens. *H. J. C., Grimston Gardens, Talcaster.*

AMERICAN NOTES.

HELIANTHUS MAXIMILIANI.

This noble autumn-flowering plant is a native of the trans-Mississippi prairies, where, during September, one may see thousands of plants of it standing tall and stately among the Asters, golden rods and bunch grass. It was one of the weeds amongst which I grew up, and I have always had a special fancy for it. It has been a personal gratification to read the favourable notices of it in European journals of recent years, and to know that it is being cultivated and admired by the flower-lovers of foreign lands. Up to the present time it has been very little planted in the gardens of the Eastern States, and of course it is not planted in western gardens because it is so common

in the fields. One sees it now more and more frequently, however, and one and another plantsman is putting it in his catalogue. Some plants which I recently saw in a New York State-garden were a perfect glory with their long stems of golden-yellow flowers. It holds its blossoms very late in the autumn, and is desirable from many points of view.

SILPHIUM LACINIATUM.

This is another fine autumn-flowering Composite from the western plains. It is quite commonly known under the name of "Compass Plant," from the fact that, in the hot autumn days on the prairie, its large coarse leaves tend to take always a north and south direction. But aside from being known as a curiosity, it has not found its way into the hearts of American gardeners, nor into their gardens. I do not remember ever to have seen it mentioned in a nursery catalogue. Still, I regard it as a valuable ornamental plant; and I have no doubt at all but what it will some day be generally recognised and admired.

A "FREE-FLOWERING" CHRYSANTHEMUM.

I had the pleasure of seeing in the Cornell University greenhouses the other day some flowering plants of this novelty. I do not know in how much this is a departure from the habits and traditions of the Chrysanthemum, but it is something quite different from the ordinary florist's flower. The plants are small or of medium stature. The blossoms are of the Chinese type, and average about 2½ inches in diameter. They are nicely doubled, and appear to be of good substance. They are clear white. Of course, such small flowers as these will not take the place of those of 6, 8, or even 12 or 14 inches in diameter which are handled by the trade during the winter, but they are nevertheless much prettier than the overgrown florists' flowers for many purposes. They have good stems, and are suitable for cutting in sprays, or for use with short stems in design work. But the principal feature of interest is their habit of blooming the year round. Mr. W. T. Bell, the introducer, writes to the *Florists' Review* that one plant flowered September 26, 1896; that several blossoms were cut from the same plant the following Easter; and that from August to December following it was in almost continuous bloom. A plant of this sort will appeal strongly to many amateurs, and it will probably find favour for certain classes of work with professional florists. *P. A. Waugh.*

NOTES ON PEACHES AND NECTARINES.

THERE appears in the last issue of the *Journal of the Royal Horticultural Society* a report on Peaches and Nectarines as grown at Chiswick, in which fifty-eight varieties of Peaches and twenty-six Nectarines are described. The report, which was drawn up after careful examination in 1897-98, of the collections by competent authorities, cannot fail to be of much service to such planters of the above fruits as need a guide when ordering trees. I do not suppose that the list intended to be considered exhaustive ones of good varieties; at the same time they include most of the best. One grand Peach that deserves to be included in every collection, I notice is omitted, viz., *Raymaeker's*—or is it considered to be synonymous with another? It is also unnoticed by Mr. Wright in the *Fruit Growers' Guide*, nevertheless, there is an excellent kind grown under the above name. It was recommended to me by Mr. Coleman, of Eastnor Castle, who described it as a late Noblesse, a true character; but the tree is more robust, and the fruit larger than that of the old Noblesse. It should be mentioned, that my experience with it is confined to house culture, under which condition it fruits freely, and ripens a week later than *Barrington*.

As might be expected, *Bellegarde* is spoken very highly of. Taking everything into consideration, we have no variety to equal it, and it takes prominent places in each of our Peach-houses, succeeding equally well in an early, mid-season, late house, or outdoors. The tree is very hardy, blossoms freely,

rarely dropping any buds, and sets its fruits very freely. We have two trees of it in one house that respectively cover 220 square feet of trellis-work, and they never fail to carry full crops of fruit equally distributed over their surface. Were we confined to one Peach, we should certainly select *Bellegarde*.

Barrington, another old Peach, is truly alluded to as one of the finest and best late Peaches; like the preceding variety, it has a strong constitution. We have a tree of it growing in a second early house, where it has been for at least thirty-five years, and has, at any rate during the last twenty-five years, and probably previously, never failed to produce a good crop of large delicious fruit, although it sometimes drops many buds. During recent years the main branches of this old tree have been renewed by breaks from its base, there being but one of the original tree left. The best of the old Peaches, like the best old varieties of Grapes, appear hard to beat, at least with respect to flavour.

Dryden Nectarine is described being at Chiswick one of the best in every respect; and the same may be said of the variety here, with the exception of flavour, but in this important point it is like other white-fleshed varieties, inferior to the best of the yellow-fleshed ones, as, for instance, *Pine-apple*, *Pitmaston Orange*, and *Humboldt*. In regard to bud-casting in the Peach, the primary cause is a check to their development after they have been excited; this not unfrequently happens where bedding plants are occupants of a house during the tree's resting period—particularly is this the case after severe winters, where artificial heat has been employed to exclude frosts. *Thos. Coomber, The Hendre, Monmouth.*

RUELLIA MACRANTHA.

ON several occasions during the past few weeks specimens of flowers of this beautiful stove-plant have been sent to this office for a name, the possessors of the plants being in ignorance of its proper designation, although they were evidently acquainted with its cultivation. Its proper season of flowering are the months of October, November, and December, and on that account, apart from the beauty of the flowers, it is a plant the gardener should set much store by. The flowers, of a carmine-red colour, with white and pink lines on the throat, measure from 3 to 5 inches in length, and 2 to 3 inches in breadth, and these come in terminal axillary cymes on the main shoots. The leaves are retained by the plant for a considerable time, unless the soil is allowed to get very dry, when the lower parts of the plant become bare. Propagation should take place in the spring, in moderate warmth—say, 58° to 60° Fahr. The rooted cuttings should be potted in rich soil, and kept close and shaded till re-established. When the plants are well rooted afford air freely, and water in considerable quantity. The plants should have the points pinched out till they form bushes with from eight to ten shoots. The compactness of the growth depends more or less on the amount of air afforded the plants, and for the purpose of enlarging the flowers, and maintaining the plants in robust health without much repotting, manure-water should be afforded when the flower-buds commence to develop. The plant does best at the warmer part of a greenhouse or the cooler part of the intermediate-house. The flowers remain on the plant for fourteen days, and are produced for six to eight weeks in succession. Those plants that receive the fewest repottings, are naturally the first to come into flower; no plant should be repotted after the middle of August, and a month earlier is a better period to stop repotting. For an illustration, see p. 44 of *Gardeners' Chronicle*, January 12, 1895.

PALLANZA AND ISOLA BELLA.

(Concluded from p. 329.)

FROM Pallanza to Isola Bella is but a step, so to speak. This little island may be described as one of the wonders of the horticultural world; it is the property of the Borromeo family (who may let but who cannot sell

their islands on the Lago Maggiore). Count Vitalio Borromeo had it converted from a barren slate-rock into a beautiful garden in 1650-71. It is stated that every handful of soil on the island was originally brought from the mainland. The Isola Bella has not materially changed since Eustace wrote his *Classical Tour through Italy*, 1813. He then described it as follows:—"The garden occupies nearly the whole of the island. It consists of a pyramid formed of ten terraces, rising above each other, and terminating in a square platform. The terraces have gravel-walks the whole length; they are bordered with flowers, and their walls covered with fruit-trees. Rows of Orange and Citron-trees shade

some pleasing recollections in the mind of the English traveller. Gibbon described it as "an enchanted palace, a work of the fairies, in a lake accompanied with mountains." Other writers have expressed their opinions on the wonderful Isola Bella in somewhat different strains: Hazlitt, the critic, describing it as resembling "a pyramid of sweetmeats ornamented with green festoons and flowers;" and another comes to the conclusion that it "is only worthy of a rich man's misplaced extravagance, and the taste of a confectioner."

Both these worthies were obviously convinced of the extreme accuracy of their own individual standards of taste; but the Isola Bella

formed into terraces, against the walls of which are planted a great variety of kinds of the Citrus." The trees, Cadell in his *Journey in Carniola and Italy*, published eighty years ago, "are covered with houses of boards during six months of the year. The houses are put over the plants in the beginning of November, and now, on April 20, the gardeners are preparing to take them off. The front of the houses has wooden doors on hinges, that are opened in fine weather, to give light and air to the plants. In very cold weather, a fire of charcoal is made on the floor within the wooden house." However much opinions and tastes may differ, the glorious situation of this island, and the magnificent views to be had at every turn, must for ever remain engraved on the memory of every person who has once visited the place. *W. Roberts.*

THE CAMELLIA AS A SEA-SIDE PLANT.

WHAT a difference would our sea-side towns and villages present if we could only cover the walls and bare places with a variety of evergreens! What a relief if masses of green alike in summer and winter appeared for the eye to rest upon when it turns from the glare of the houses and the sea! The apparent difficulty is, that so few evergreens are found to flourish under ordinary cultivation in the soil and air of the sea-side. The *Euonymus* is an exception, as may be seen at Brighton and elsewhere; but there are, doubtless, others. We might imagine or reason out a list of names, but experiment would seem desirable before attempting the object on a large scale; and if after using the few tried plants more liberally we could add but one evergreen to the few already in favour, it would be a gain worthy of a reasonable expenditure of time, thought, and money.

Reasoning *a priori*, I would suggest that the first one experimented on should be the Camellia. It is as hardy as the *Euonymus*, a native of the same country, and practically the leaves, which are the breathing apparatus of the plant, are of a similar character, flat, smooth, and glossy, on which dust and other impurities cannot conveniently settle. If only the Camellia could be added to our sea-side plants, whether against buildings or as low trees, what a change would come over the spirit of the scene! There would be always the large, glossy, dark-green leaves, and in March, April, and May the large, handsome, red and white flowers. Turning the eye inwards from the sea, monotony would give place to variety, aridity to freshness, and a desert be converted into a fairy land. In making the experiment, the soil and choice of sorts and shelter present themselves to us as the most important points for consideration. It will not do to stick them in anyhow, as is too often done in planting, and then leave them to their fate. Holes 3 feet square and 2½ feet deep should be dug and filled with rich turfy peat or loam (not sea-side but inland soil), and then should be well drained, and yearly enriched by a top-dressing of well-pulverised manure. The plants should be firmly secured in their places, and watered occasionally as required. The sorts should be those known to the experienced cultivator as hardy, free-growing, and free-flowering, strictly avoiding those of an opposite nature, however beautiful, those which are over-double or of weakly growth being presumably the least desirable. Where the plants are exposed on all sides, it would be well, though not always necessary, to protect them from the wind on one side until the roots have taken a firm hold of the new soil; and they should not be planted singly, but in groups or masses. I am satisfied, after examining the few plants of Camellias that I have seen flourishing in sea-side towns in various districts, that the sea-air would be no obstacle to success, but a certain amount of shelter is absolutely indispensable. [In the warm south it is found that the Camellia, in single and double-flowered varieties, succeeds on a northern aspect better than on a sunny one, and the

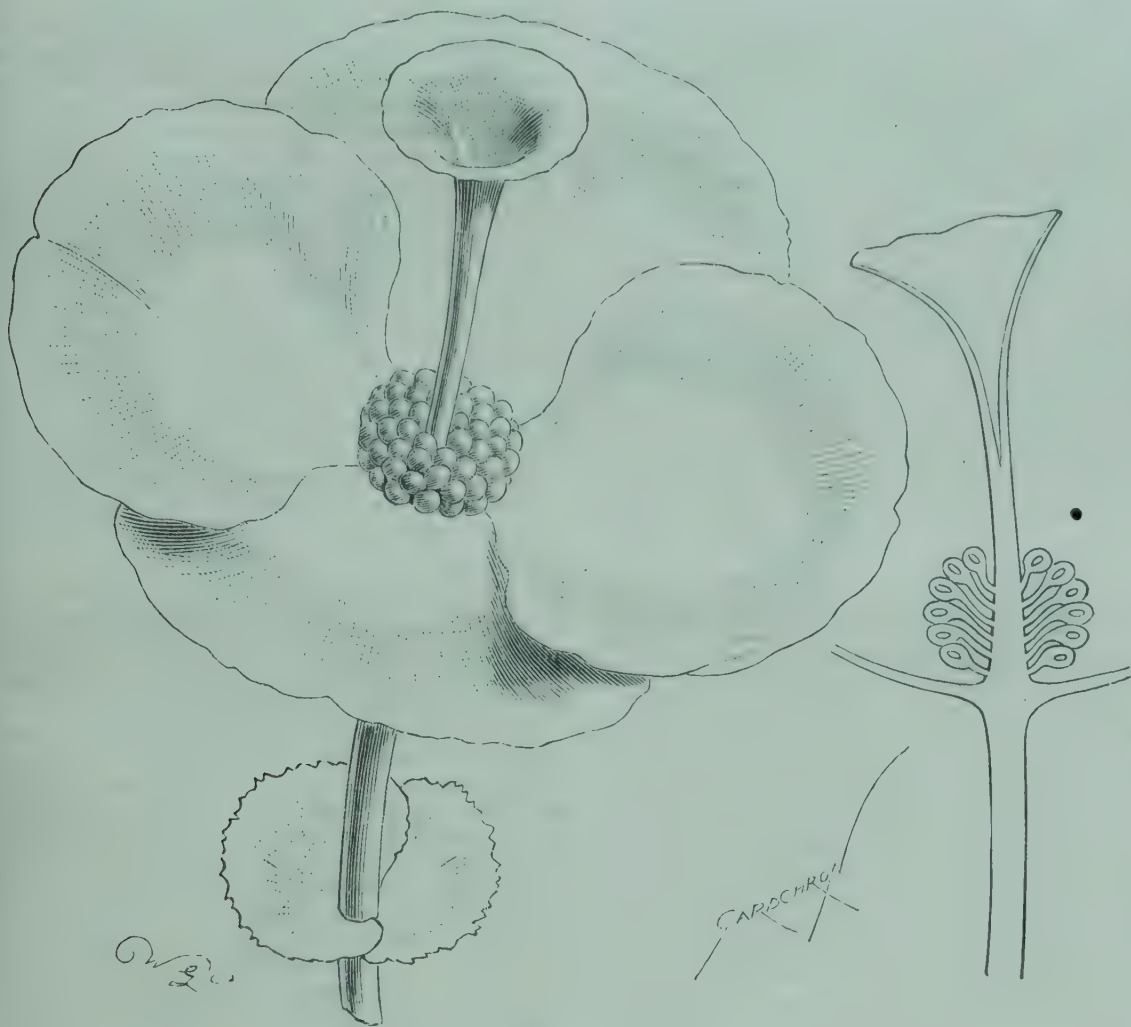


FIG. 107.—A MONSTROUS BEGONIA.

(See Royal Horticultural Society, "Scientific Committee," in present issue, p. 372.)

the walks, and gigantic statues, which when near appear grotesque, crowd the corners and front of the palace. The parterres are watered by fountains that rise in different parts of the edifice, and fall in sheets from marble vases. The area of the pyramid covers a space of 400 feet square; the platform on its summit is 50 feet square, and its whole elevation is about 150 feet. The terraces are supported by arcades, which form so many grand galleries or green-houses, where the more tender plants and flowers are ranged during the winter. On the north side of this garden is a grove, which even modern taste must be gratified and delighted with; it is formed of various evergreens, but particularly Laurels, of great height and most luxuriant foliage. A path, winding in an easy curve through this thicket, leads to a grove, and thence to the palace. This grove, from its resemblance to domestic scenery, awakens

is one of the most perfect specimens extant of the Italian style of gardening, and it is ridiculous to compare it with the many styles which have at various times prevailed in England. Since Eustace wrote, a good many fresh plants from tropical and sub-tropical parts of the world have found their way to Isola Bella, and have become thoroughly acclimatised. But the general floral aspect of the place has not greatly altered—the Aloe, the Orange, the Myrtle, the Pomegranate, a great variety of Cacti, of Cypress, the Camphor, various species of *Metrosideros*, the Cedar, the Magnolia, Laurels, Cork-trees, Eucalyptus, Oleanders, Figs, Vines, Olives, Mulberries, and an infinite variety of other shrubs, trees, and herbaceous plants, here thrive with the greatest possible vigour. The Orange-trees at the Isola Bella occupy the south and east sides of the island, "which sides," as Loudon points out, "are

flowers, rather evanescent on out-of-door plants, remain on them for a rather longer space of time. There is, or was, a large plantation of Camellias on the Earl of Eldon's land at Lytchett, a place on the northern shore of Poole harbour. The plants grew without any attention whatever beyond cutting them back with a billhook when they got bare at the bottom. ED.] Wm. Paul, F.L.S., Waltham Cross.

A SUCCESSFUL HYBRIDISER.

AMONG the leaders in his profession stands the name of Luther Burbank, one of the most successful hybridisers of plants which this country has yet produced. He was born March 7, 1849, at Lancaster, Mass. His father was a farmer, and his mother a member of the Burpee family, a branch of which conducts at Philadelphia one of our largest seed-houses, survives at the age of eighty-five years. Young Burbank's education was considered liberal at his eighteenth year, and his first employment was in the Ames ploughworks at Worcester, Mass., of which his uncle was superintendent for half a century. But service in a noisy factory was not compatible with his love of Nature, and in 1870 he purchased a small tract of land at Lunenburg, Mass. Here began Mr. Burbank's career as a horticulturist, and his first work for the science was consummated in 1873, when he originated the Burbank Potato. Finding the climate of New England unsuited to the requirements of the experimental work in which he found absorbing interest, he removed, in 1875, to Santa Rosa, Cal., where to-day he has extensive grounds and a large collection of Lilies and many other plants, shrubs and trees.

Always an indefatigable worker, Mr. Burbank has run the whole gamut of horticultural experiment, and has many times duplicated his first success with the Potato. He grew more than a million seedlings to establish a new race of Gladiolus; and the Canna, Iris, Calla, and the Rose have also responded to the masterly touch of this adept hybridiser. Raspberries, Blackberries, Walnuts, Quinces, Prunes, and many other fruits have been developed to man's greater good at his garden of the Pacific. Beside his greenhouses and 10 acres of home grounds on Petaluma Avenue, Santa Rosa, he has a farm a few miles distant, at Sebastopol, where 18 acres are given over to seedlings, and 30 acres devoted to farm experiments. So fully is Mr. Burbank's time occupied by his studies, tests, and correspondence, and so seriously has he been annoyed by the depredations of those who seek personal profit as a result of his successes, that he refuses to admit the public to his gardens except in the month of June, which is reception period for intending purchasers. Then those who anticipate a view of uniform rows of beautiful plants, or healthy shrubs and vegetables, are sadly disappointed, for they find, instead, chaos, a veritable horticultural workshop.

A story which Mr. Burbank delights in telling is that of a member of one of the largest floral firms in the country who had travelled over 3000 miles to see the workings of this hive where man and nature join in industry. On the way from the station the visitor overtook an old gentleman who had worked many years for Mr. Burbank, and enquired of him if he knew Burbank. "Of course, I do," was the reply. "He used to have a big nursery, but sold it out, and now he raises acres and acres of stuff, and every summer has 'em all dug up and burned. I wouldn't give 150 dols. for the whole kerboodle." The gentleman from the Atlantic stored away this gratuitous advice, but before the day had passed he selected from Mr. Burbank's stock a half-dozen plants for which he paid 6000 dols.

Whenever humanity calls, Mr. Burbank stands ready to respond, and it may be said for his work that his best introductions are yet to come—at least, that is his opinion. It requires much time and close attention to properly segregate, classify, test, and propagate; and after having secured the desired improvement the work increases in value, and results in geometrical ratio as time progresses, one life affording only a good beginning for others to build upon. "The American Florist."

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Grape Vines.—The forcing of Vines, whose fruit is intended for consumption in May next should begin forthwith. If the Vines are grown in pots I would refer my readers to the Calendar for Oct. 29 last. Planted-out Vines which have been forced early in recent years may be depended on to break regularly for growth the entire length of the rods when secured to the trellis in the position in which they are intended to fruit, but in the case of Vines that were not forced early last season it is different, such Vines not breaking so regularly; and with the intent of making the break a satisfactory one, tie them temporarily along the lower part of the trellis, the uppermost end of the rods taking a downward curve, and in this position they must be kept till they have broken the entire length, from bottom to top, which is usually in about six weeks. Let the state of the inside border as to moisture be ascertained, and if it is found to be approaching dryness, a liberal application of tepid water should be made. In the case of an outside border not yet covered with a thick layer of dry leaves, this covering should be put on without further delay. Let the forcing go on slowly, beginning with temperatures of from 50° at night, 55° by day with fire-heat, with a rise of 10° to 15° with sun-heat, and in cold weather a warmth of a few degrees less will be better than hard firing. Let these temperatures rule till the buds on the Vines begin to burst, when the warmth day and night may be raised 2° or 3°. The rods should be wetted once or twice a day, and the floors damped, more or less, according to the brightness of the weather. Afford a small amount of ventilation by the upper lights to let out excess of moisture, closing early in the afternoon in mild weather, but affording a trifling amount of ventilation at 6 P.M., to remain through the night.

Other Vineries.—Prune, clean, and dress the Vines, and put generally in good order the vinery that will be started in January. We are having the usual foggy weather, which makes it incumbent for the successful keeping of late Grapes, to keep the vinery shut, and to afford a slight warmth in the heating apparatus. These precautions are as necessary in damp and rainy weather, as in time of fog. Look frequently and carefully round each bunch of Grapes for decaying and mouldy berries, removing them, stalk and all, with the scissors. Twice a week is not too often to do this. Let all kinds of work be forwarded, such as removal of the worn-out borders, taking out the whole of the soil and the drainage materials, but not disturbing the roots in the outer border. If the staple be retentive of moisture, the bottom should consist of concrete and the drainage of clean brickbats. The new material should be made into a border 3 to 4 feet wide, which is enough for one year. Outside borders may be renewed if the Vines are established in the inside borders made in recent years. If a border requires additions at the sides, do not add more than 2 feet.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor LAWRENCE, Bart., Burford, Dorset.

The Cool Odontoglossums.—Much attention will now be required of the grower of these plants, abundance of air being afforded them in mild weather, any neglect of which causing the new breaks, now rather forward, to grow weak, narrow, and lengthen unduly. Not only air is wanted, but plenty of light, to strengthen the flower-shoots. Water should be afforded with great caution, not a plant being allowed to get even moderately dry before having water afforded; on the other hand, a constantly wet state of the compost will cause decay, and the young leaves to go off at the points. At this season patches of mildew sometimes appear on the undersides of the leaves, which must be quickly eradicated, or they will spread with great rapidity to almost every kind of plant in the house. Let each plant be closely examined daily, and immediately mildew is detected, the hot-water-pipes should be made lukewarm, and a small amount of ventilation given at the top; and if the outer air is mild, the bottom ventilators should be opened widely. This kind of treatment will check the spread of mildew, but it will not destroy it entirely, and Richards' XL-All mildew insecticide should be employed on the affected leaves, using a bit of sponge. Full sunlight being essential, the glass must be kept bright by frequent washings. When re-arranging

the house, each plant should be freed from insect dust, and dirt. Slugs, generally numerous in the cool-house, which are always to be found in sphagnum moss, must be assiduously sought for, or the young flower-spikes will be destroyed in numbers. The gardener who is on night duty should be instructed to seek for slugs; and good baits for the latter consist of leaves of the Lettuce, shallow pans containing bran, slices of sweet Apples, and of Potatoes; and any of these may be placed on and among the plants. If, while engaged in re-arranging the plants, young growths, with a brown outer sheath noticed, slit these in several places, and then pull off in small pieces, so as to allow the roots to find their way without impediment into the potting materials.

Miltonias should now be growing freely, and these plants require similar attention. Occasionally when growing fast, some of the leaves of these plants clasp each other so firmly as to cripple the young leaves by causing crinkling. The gardener, when he observes this, should gently separate them from each other. A black spot which sometimes appears on the tips of the young leaves of *Miltonias* is due to growing the plants too warmly; and it affects to a large extent plants that are afforded water improperly, and especially such as are growing in constantly saturated materials, the evil being aggravated by a few degrees below the average temperature. During the winter months *M. vexillaria* and its varieties, *superba*, *Leopoldi*, *rubella*, and the beautiful hybrid, *M. Bleuana*, should be afforded a light, airy position in the intermediate-house, and protected from woodlice, which are partial to the new roots gnawing them and checking their development, so that it becomes a necessity to kill all that can be found. *M. Roezli* is a rather more difficult plant than *M. vexillaria*, but once a suitable position is found for it, it should remain there. The plants at Burford Lodge make free growth in the same house as *M. vexillaria*, but in the closer and warmer part of it. *M. Roezli*, unlike allied species, is a plant whose roots do not wander widely, and it may therefore be grown in small pots, and then, if well-rooted around the inside of the pot, a plant will take plenty of water at all times. The thin grassy leaves of this species, being rather tender, often get affected with black spot, and when this occurs, the plants should be kept a little drier in every way.

Cœlogyne cristata.—Those plants which have completed their growth for the season will be pushing up flower-spikes, the complete development of which takes a considerable period of time, and a constantly wet compost must be avoided, or the spikes will decay, after having first become black.

The Cattleya-house.—*Dendrobium Brymerianum* will now be in the middle of its growth; *D. Dearei* appears to thrive better in this house than when grown in the East Indian-house; and both species will require plenty of root-moisture, and on bright days a good syringing overhead will be an assistance, checking red-spider.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Jerusalem Artichokes.—Some roots should be lifted and stored in mould or damp sand for use in bad weather, when probably it would be difficult to get a spade into the soil; or the whole of the crop may be lifted, and pitted.

The Globe Artichoke.—These plants, if not already dressed, should be attended to forthwith, with plenty of rich manure, close up around each, heaping the more strawy parts round the shoots, with some soil strewn over all for tidiness' sake, and to prevent the wind removing it, sharp frost having a ruinous effect on unprotected shoots and roots.

Mushrooms.—Beds in the open air should now have extra protection, in the form of dry litter and oil cloth canvas covers, in order to preserve warmth in the beds. In the Mushroom-house maintain a steady warmth, not exceeding 60°, or falling below 55°, and do not make use of water on the beds unless the soil has become dry, but use the syringe daily in keeping the covering of the beds damp; and if the house has a tendency to get dry, even when fire-heat be now used, damp the floor and walls. New beds may be made as often as materials can be prepared. I prefer to make smallish beds at short intervals of time rather than large beds at long intervals.

Celery.—The later successional having made rapid growth of late, should now be earthed up without delay, taking care not to earth them up higher than the top of the heart leaves. Place protecting mate

rial in readiness for covering the rows of early Celery in the event of hard weather occurring—not before.

Spinach.—This crop is troublesome at this season to get in quantity; and all that can be done to encourage growth is to use the hoe freely between the rows on fine days, and to give a sprinkling of soot along the rows.

General Work.—Proceed with all kinds of ground-work, such as digging and trenching; also collect leaves for hot-beds, and keep the garden-walks clean and tidy.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Bush Fruits.—The pruning of the bushes may be now undertaken, so as to finish the operation before hard weather sets in. The bushes should be kept open in the centre, that is, freed of shoots generally, less so, however, in the case of Black Currants. A bush of Red or White Currants, after it is pruned, should resemble a basin, the main branches standing up at regular intervals all round, with here and there a shoot of this year's growth should be left on each, 6 to 12 inches long, the shorter shoots being the termination of the branches, all other shoots being spurred into a close cluster of buds at the base. Unduly long fruit-spurs should be removed entirely or shortened. Some varieties of the Gooseberry are naturally well adapted for the basin-form, the shoots tending outwards and drooping, others have a more rigid habit, and do not lend themselves so well to this form, and shoots may be left in small numbers, without being much shortened, to grow round about the central open space. The tips of the drooping varieties should not in any case be nearer to the ground than 1½ foot. The spurring-in of lateral shoots is the same as in Currants. In order to keep a bush that has reached, say, a diameter of 5 feet in the crown, the longer branches should be shortened back to a well-placed strong shoot, springing from their uppermost sides. Black Currants require to have much of the wood which has borne fruit removed at the ground-level, and its place left to be filled by the best of the current year's shoots. The shoots retained for bearing fruit the next year should not be curtailed in their length, excepting those that are unduly long in comparison with the others. In the case of young bushes, the shoots must all be cut back till a sufficient number break from the bottom to form a bush of, say, 2 feet in diameter, at which stage fruits usually form in some quantity, and cutting-back should then cease, and thinning-out take its place. When a Black Currant bush is exhausted, it may be rejuvenated by cutting every shoot down to the ground, when, if the land be heavily manured and forked over, strong growth will be made, and good crops of fruit obtained in the space of two years. Black Currant bushes with a single stem are sometimes planted, but it is a bad form, for the reason that not enough young shoots are produced yearly to make the bushes profitable. Strong shoots of the different kinds of bush-fruit should be secured at pruning-time for making cuttings, laying them in the soil thinly and firmly, if they be not made forthwith into cuttings. The earlier a cutting is made and bedded out, the sooner a callous is formed; and this is hastened in autumn by the warmth latent in the soil, whereas winter-made cuttings make no progress whatever before the sun has warmed the soil in the spring. Currants, red and white, and Gooseberry cuttings, should be 18 inches long, with a heel of old wood; and all the buds but four or five at the top should be scooped out. Black Currants should only have the terminal bud removed. Cuttings should be set out with the dibber or the spade in rows 1 foot apart, and the soil pressed firmly around them. When the pruning of the bushes is finished, the plantations should be manured if necessary, and the land dug with a fork as deeply as may be without injuring the roots, and the surface left in a rough condition.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord Gerard, Eastwell Park, Ashford, Kent.

The Rock Garden.—The present is the best time for renovating or replanting rockeries and alpine gardens. Usually the rains carry the soil away from the ledges and pockets, rendering it necessary that it be replaced with new compost. Leaf-mould and sand form a good compost for this purpose, and with this the work may be carried out, taking care to make it firm previous to planting. An enumeration of the plants which are suitable for the rock-garden would occupy too much space here, and it will suffice to name the

Saxifrages in their many varieties, Cyclamens, Arabis, and the Campanulas; these and many others, of which full descriptions may be found in the nurserymen's catalogues, will enable anyone to obtain the plants which are most suitable for this style of gardening.

Hardy Ferns.—Where shady corners exist in a garden, or there are places underneath large trees where grass will not thrive, hardy Ferns may always be planted, and the otherwise bare spots made interesting and pleasant objects to behold. If in such places a rockery be formed, and the Ferns planted on it so as to rise one above the other, the effect is better than when planting is carried out on level ground, as it admits of the beauty of individual Ferns being more clearly noted. Leaf-soft and fibrous loam, with some coarse sand or broken sandstone added, is all that the plants will require. The species which are suitable for planting in the shade are Polystichums, Polypodiums, Scolopendriums, Lastreas, Athyriums, and Osmunda regalis, the latter doing better if planted in wet places.

Cortaderia (Glycerium) argenteum (Pampas-grass).—There is scarcely any other hardy plant which throughout the autumn months affords a prettier effect in the garden than the Pampas-grass; whether it be planted in the front of shrubberies, on promontories falling into artificial pools, lakes, or the banks of streams, or on the turf, the effect is always good. The plant requires careful planting in rich, well-drained, deep soil, and then, when established, it grows large with great rapidity. A damp situation in which water does not stagnate suits it best. It may be remarked that a shallow soil resting on chalk does not suit the plant.

Bedding Pelargoniums in pots or boxes, should be frequently cleared of dead leaves, and afforded plenty of air in mild weather, but not much water at the root. In foggy or very damp weather, apply fire-heat by day, and afford air plentifully at the same time.

Canterbury Bells.—Plants raised from seed sown in June and July, should now be planted where they are intended to flower next summer, having previously afforded manure, and dug the ground deeply. Much care should be taken of the foliage, which is very tender when young, and readily injured. Do not plant deeper than the plant was before.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Richardias.—These plants should have made much progress, and some of them ought now to have spathes showing. If the pots are filled with roots, and are not large-sized, manure-water may be freely afforded, as the stronger the growth the finer the spathes. If the plants are growing in pits with movable lights, the latter may be removed entirely on fine days, plenty of air being necessary for sturdiness of growth. If green-fly is troublesome, as is often the case, fumigate the plants forthwith.

Chrysanthemums.—Conservatory and greenhouses will in many gardens be a blaze of colour at the present time, and this display may be kept up to the end of the year if late-flowering plants be kept in cool quarters, heat being used merely to keep frost out of the house. Slight shade of some description will also tend to retard flowering, removing the shading when the sun no longer shines on them. Plants that were lifted from the open ground, and are now rooting into the soil in which they were potted, may be assisted with manure-water. Now is the proper time to rectify mistakes in names. As the plants go out of bloom and are cut down, remove them to cold frames or pits, and afford protection in frosty weather; keep the soil rather dry till the new growth is well above ground. By removing the plants with blooms fully developed to a cool, dry shed, they may be kept in a fresh-looking state for a considerable length of time. Keep the houses as dry as possible, ventilate freely, and remove decaying leaves from the plants.

Centropogon Lucianus, Jacobinia (Sericographis), Giesbreghtiana, and Thyrsacanthus rutilans.—Afford these plants a position near the glass in order to prevent drawing, and afford weak manure occasionally. Too much water at the root will cause a sickly appearance in the plants, but an occasional application of sulphate of ammonia will improve the colour of the foliage. The quantity to be used in three gallons of water may be measured in the first instance by placing as much sulphate of ammonia on a shilling as can be piled up on it, and this quantity must not be exceeded or harm will result. Let the plants and the sides of the pots, and the stage between the pots be thoroughly syringed once a day.

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

No sooner have the blooms faded than it is time to make preparations for another season, and in doing this it is very essential that the foundation be thoroughly laid if success is to be looked for. The best results follow an early start, and steady progress throughout the year. Some gardeners would have us believe that the first week in March is early enough to take cuttings, but it is remarked that the advocates of this course are generally conspicuous by their absence at exhibitions, or generally make a poor show. Early propagation of the Chrysanthemum means a steady, uninterrupted growth in a cool temperature during the time the plants need glass protection, and under these conditions the shoots have the best chance of becoming properly matured. The wood of plants struck in the spring never ripens thoroughly, hence perfection, in incurved varieties at least, is seldom attained. It is not possible to get perfect examples of the Chinese or incurved section without a natural maturing of the growth of the plant; and this cannot be obtained by forcing them by leaps and bounds as it were, to make up for time lost. From the foregoing remarks my readers will gather that I am in favour of striking the cuttings early. Another objection, too, I have against late propagation is the amount of space required by the old plants which are to afford the cuttings, as against the little space required by the cuttings. Nor can the shoots be kept in such a good state for making cuttings as they are in December and January, being sure to get drawn and weak, and less well fitted to serve as cuttings.

Having decided that early propagation is advisable, the next thing is to take steps by the time many varieties are required, say, the middle of next month, to ensure good stout cuttings. Now that so many varieties and plants are grown in what is often a very limited space, it is generally necessary to stand the plants as closely together as possible during the season of flowering. The cuttings that are to provide the future plants must be obtained from the base of the plants that are still or have just passed out of flower; and owing to the absence of light among the plants, shoots are apt to be drawn, and consequently weak. Endeavours must be made to obviate this as far as possible, by affording each ample space, light, and air, and to enable this to be done, the plants that throw up plenty of shoots should be cut down to within a few inches of the soil; but shy-growing, new, or scarce varieties not lower than 1 foot from the soil, thus enabling some few more cuttings to be obtained from these.

These cuttings from the stems are not so good as those that spring from the roots, being apt to flower prematurely, and not too many such should be taken. By cutting down as soon as may be the plants that have bloomed, air and light are admitted to the plants, and the shoots get robust. Place the old plants in any cold house close to the glass, say, in a vinery or Peach-house, or failing these in a cold frame, which latter answers very well unless in time of hard frost; in that case considerable protection is required, or the tender growths will be injured. Some varieties throw up so many shoots that these become weak by overcrowding, and the weaker ones should be removed before damage is done. Not much water should be afforded, or the young growth will get unhealthy. Some varieties may refuse to start into growth, and it is often the weakly growers which have this fault. The drainage of the pots should be put in order, as a soured state of the soil is not favourable to the growth of the shoots. Let the surface-soil be removed down to the roots, replacing it with a fresh gritty compost. Syringe the plants daily, and in very stubborn cases plunge the pots in a gentle bottom-heat. Green and black-fly, which often infest the tips of the young shoots, must be got rid of by frequent fumigation with tobacco-paper, or by syringing with mild tobacco-water in which a little soft-soap is dissolved. It is surprising how soon growth is checked by an attack of aphids where a system is adopted of growing plants solely for the purpose of providing cuttings in May either by having stock plants in the borders, or growing them in pots and permitting these plants to produce one bloom each, no trouble should be experienced in obtaining the necessary number of cuttings when the time comes to strike them. It is, however, seldom that this can be effected, owing to lack of space or the time to attend to the plants during the summer.

E. Molyneux.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 21	National Chrysanthemum Society, Floral Committee meet.
TUESDAY,	Nov. 22	Royal Horticultural Society's Committee meet.
THURSDAY,	Nov. 24	Dundee Chrysanthemum Society's Exhibition (3 days).

SALES.

MONDAY,	Nov. 21	Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Nov. 22	Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	Nov. 23	Dutch Bulbs and Continental Plants, at Protheroe & Morris' Rooms.
THURSDAY,	Nov. 24	Great Sale of Fruit Trees, at Perry Hill, Cliffe, near Rochester, by order of Mr. W. Horne, by Protheroe & Morris.
FRIDAY,	Nov. 25	Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—41° 6'.

ACTUAL TEMPERATURES:—

LONDON.—November 16 (6 P.M.): Max., 58°; Min., 53°.
PROVINCES.—November 16 (6 P.M.): Max., 55°, S. Coast;
Min., 45°, Aberdeen.
Dull, humid, foggy, warm.

Seaside Planting.

THE planter will be busy everywhere whilst the mild weather lasts, and seeing that many persons are in doubt as to which species of exotic shrub and tree will succeed at the seaside, we append a list of those about which there is no doubt. The plants mentioned are chiefly those of a deciduous character, and which may be safely planted at this season with, of course, due preparation of the soil.

The Camellia is deservedly mentioned as a good seaside shrub in the present issue, on p. 365, by Mr. W. PAUL; *Tamarix germanica*, every one knows, does well at the seaside. A fine broad spreading tree of not more than 25 to 30 feet in height is *Paulownia imperialis*, apt to get cut in the spring in inland places, but growing and flowering well at the seaside; the flowers looking, superficially, like those of the old purple *Gloxinia*, with pendulous flowers. *Colutea arborescens*, with yellow or copper-coloured flowers, and bladder-like seed-pods, a free-flowering and rapid-growing shrub, reaching to 12 feet in height, is excellent as a solitary plant, on the lawn or in the shrubbery. *Cornus alba* and *C. sanguinea*, the latter with scarlet rind on the one, two, and three-year-old shoots, are useful shrubs of rather loose habit in wet soil and half-wild places, and both stand cutting, like an Osier. *Cercis Siliquastrum*, or Judas-tree, is a perfectly safe leguminous plant for a seaside garden, flowering annually in such situations; the plant is sometimes mistaken for the pink *Laburnum*, *Cytisus Adami*. *Vitex Agnus-Castus*, a handsome bush, with semi-pendent stems, and light blue flowers—a

good object to stand on the lawn; the plant is kept in nice form if the stems, which are numerous produced, are cut down to the ground in March. All the species of *Berberis* and *Mahonia aquifolia* do well at the seaside, and are but little affected by wind. *Calycanthus floridus*, or the Carolina Allspice, should be planted in every seaside garden, if only for the sake of the delightful fragrance of its chocolate-coloured, filbert-shaped blossoms. Most of the *Eugenias*, the "Myrtle" of Australia, as well as the common large and small-leaved *Myrtles*, succeed in all parts of the south and south-west coasts; and even as far north as Berwick, the true *Myrtle* asks for but slight protection against cold. *Hydrangeas* of all kinds should not be omitted; but they should not be exposed to the worst winds. *Hippophae rhamnoides*, otherwise Sea Buckthorn, whose shoots are densely set with orange-scarlet berries in the autumn and winter, is a true seaside half-tree, partial to moist land, but growing in that which is only normally moist, and then making a more compact crown than in wet soil. The bush is dioecious, so that both male and female specimens are required. The sexes must be noted when in flower, for it is not possible to distinguish them by the leaves. *Escallonia*s are valuable as evergreens and for their flowers. *Philadelphus* (mock Orange) in their several single and double-flowered varieties, are valuable for their odorous, white flowers—and more especially *M. Lemoine*'s varieties, with dwarf compact growth and smaller flowers; valuable for making front rows in shrubberies, or filling large beds. The *Quinces*, with their big, saucer-like white flowers, and remarkable high-coloured fruits; also the *Medlars*, should not be forgotten. Both make capital lawn plants where rigid outlines in shrubs is not considered desirable; a sunny place is best for both. *Azara dentata*, *Benthamia* (*Cornus*) *fragifera*, the Tree-Strawberry, *Buddleia Colvillei*, *B. globosa*, *Caryopteris Mastacanthus*, any of the varieties of *Hibiscus syriacus*; *Paeonia Moutan*, if planted in partial shade; *Raphiolepis ovata*, all the handsome-leaved varieties of *Rhus*; also *R. Cotinus*, which has not attractive foliage, excepting in decay, but possesses singular-looking feathery flower-heads, hence its name, Wig-tree; the numerous variegated varieties of *Sambucus* (Elders), which, however, owing to the freedom with which they grow, the planter should be cautioned about using very largely, and thereby securing a landscape "rickled o'er" with yellow and white tints. This list of seaside plants is by no means exhausted, and we may at some no distant date revert to the subject.

CHRYSANthemum R. HOOPER PEARSON.—

The Japanese variety of *Chrysanthemum*, of which we present an illustration (fig. 103, p. 369), is a grand acquisition to the yellow-flowered group. It was a seedling raised by Mr. H. J. JONES, at the Ryecroft Nurseries in 1897, and was first exhibited before the Floral Committee of the National Chrysanthemum Society on October 31 last, when the novelty was unanimously awarded the society's First class Certificate. In build the flower most resembles the popular white flowering variety *Mutual Friend*, having the pleasing wavy characteristic of that flower. In size, the bloom photographed, was 1 to 2 inches larger than our illustration, and is therefore fully as large as most exhibition varieties. The chief quality of the flower, however, consists in its rich shade of glistening yellow, which pales all existing *Chrysanthemums* of that colour. In height the plant rarely exceeds 3½ feet when cultivated for exhibition-blooms. As a market or decorative bush-plant every bloom opens perfectly, and in this respect the novelty may

be compared to *W. H. Lincoln*. It has been found that for exhibition purposes the natural crown-bud in the case of this variety affords the best results. We believe the variety will not be distributed until next spring. It has been named in compliment to a member of our editorial staff.

ROYAL HORTICULTURAL SOCIETY.—The £10 10s. Sherwood Cup will, in 1899, be given for vegetables shown by amateurs or gentlemen's gardeners on June 13 and on September 26. The points obtained by each exhibitor on each day will be added together for the result. June 27 will be the Rose Show at the Drill Hall. On July 11 there will be an International Conference held at Chiswick on Hybridisation and Cross-breeding in Plants, together with an exhibition of hybrid and cross-bred plants with their parents (when possible) for comparison.—The next Fruit and Floral meeting will be held on Tuesday, November 22, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. A lecture on "Artificial Garden Manures" will be given by Mr. A. D. HALL at 3 o'clock.

The following are the dates of the committee meetings in 1899:—January 10 and 31, February 14 and 28, March 14 and 28, April 18, May 2, 16, and 30; June (Temple Show, 1 and 2), 13 and 27; July 11 and 25, August 15 and 29; September 12 and 26; Crystal Palace Fruit Show, Sept. 28, 29, and 30; October 10 and 24, November 7 and 21, December 5 and 19; 1900, January 9 and 23.

HORTICULTURAL CLUB.—The monthly dinner and *conversazione* took place at the rooms of the Club, Hotel Windsor, Victoria Street, Westminster, on Tuesday evening, November 8, the chair being occupied by Sir JOHN D. T. LLEWELYN, Bart., M.P., chairman of the Club. The attendance of members was large, including Revs. W. Wilks and Joseph H. Pemberton; Messrs. H. J. Veitch, vice-chairman; E. Mawley, C. E. Pearson, James H. Veitch, W. Bassett, M. J. Garcia, T. W. Girdlestone, G. Bunyard, W. F. Cooling, R. Giffon Salmond, Selfe Leonard, Harry Turner, and the Secretary. The discussion was opened by Mr. T. W. Girdlestone, on "The Dahlia as a Garden Flower." He reviewed the various sections, and showed how much the Cactus Dahlia had increased in popularity, and that we might look forward to still further improvements in it. In the discussion which followed, in which most of those present took part, many interesting facts in connection with the flower were brought out, and a hearty vote of thanks was proposed by the chairman to Mr. Girdlestone for his interesting address.

DUNDEE CHRYSANTHEMUM SOCIETY.—We learn from a schedule sent us that the annual carnival of this society will take place on Nov. 24, 25, and 26, in the Drill Hall, Dundee. Last year's carnival, it is said, was the turning point in the society's career, it being on a scale much larger than formerly, and equal to the best shows in the country. This position the society has full confidence in maintaining, and this year the entries are expected to greatly exceed last year's. The society has been enabled to secure the band of the Scots Greys for Thursday and Friday the 24th and 25th, and that of the Grenadier Guards for Saturday, the 26th.

EXETER AND DISTRICT GARDENERS' ASSOCIATION.—At the fortnightly meeting of the Exeter and District Gardeners' Association, held at the Guildhall, Exeter, on the evening of Wednesday, 9th inst., Mr. F. EDWARDS, gardener at Honeylands, read an interesting paper, entitled "Deciduous Trees." Mr. W. ANDREWS (foreman gardener to the City Council) occupied the chair.

A GARDEN APPOINTMENT.—Mr. O. T. HEMSLEY, son of Mr. W. BOTTING HEMSLEY, F.R.S., of the Royal Botanic Gardens, Kew, has been appointed to the Indian Botanical Service, and arrived in Calcutta by the P. & O. steamer *Malla*, which had a rough time in the recent cyclone in the Bay of Bengal. Mr. HEMSLEY was to have been attached to the Royal Botanic Gardens, Calcutta, as an apprentice, but on arrival here was informed that he would be required to proceed to the Cinchona Plantation at Mungpu.



FIG. 108.—CHRYSANthemum R. HOOPER PEARSON: COLOUR RICH ORANGE-YELLOW. (S.E. P. 368.)

GRAMMATOPHYLLUM SPECIOSUM.—Mr. MACMILLAN, the Curator of the Royal Botanic Gardens, Peradeniya, writes in the following terms to the *Tropical Agriculturist*:—

"It may interest some of your readers to know that the largest Orchid known (*Grammatophyllum speciosum*) may now be seen in flower in those gardens, this being, so far as is known, the first time it has been induced to bloom in Ceylon. That this Malayan plant, which was introduced into Ceylon probably about 1850, merits the title of 'Queen of Orchids' will be conceded from the dimensions of the Peradeniya specimen above referred to, viz.: length of stems or pseudo-bulbs (twenty-four in number), 5 to 10 feet, the sheathing leaves being about 2 feet long, and closely arranged in two rows on the stem; height of flowering scapes (six) at present, 5 to 6 feet; thus the height from base of mound containing the plant to top of inflorescence is about 10 feet; circumference of the plant, approximately, 40 feet. Of individual flowers, nearly 500 can now be counted (not including the smaller in bud), each measuring $5\frac{1}{2}$ inches to 6 inches across."

PRESENTATION.—On Saturday evening, the 5th inst., a few of the *employés* as representing the other servants and friends on the Dupplin estate, called on Mr. BROWNING, the overseer, Dupplin Castle, at his residence, and presented him with a silver-mounted walking-stick and a purse of sovereigns, on the occasion of his leaving Dupplin. Mr. HENRY CLARKE, who presided, said he had a very pleasant, and at the same time an unpleasant, duty to perform. They very much regretted that Mr. BROWNING was about to leave them. He had been so long there—some twenty-nine years, that they had begun to look up on him as part of Dupplin, and his kindness to every one of the *employés* had been so marked, that they felt they were parting from one of their dearest friends. He had given many of the men very good starts in life, and they would all have very tender recollections of the time they spent in the gardens at Dupplin under him. Mr. BROWNING, in suitable terms, thanked the deputation for their handsome gifts.

MERYTA SINCLAIRI (the Puka tree).—In reference to the very interesting letter of Mr. BOSCAWEN'S in our last issue, we may now cite the following passage from KIRK'S *Forest Flora of New Zealand*:—"This noble species is one of the rarest plants in the world, being restricted to a few individuals growing on one or two small islands near the northern extremity of the colony; its leaves are larger than those of any other plant with entire leaves in the New Zealand flora. It does not occur on any part of the mainland. In 1869 Professor HUTTON and myself visited the Taranga Islands, where we had the good fortune to find a few trees which had long been known to the Maoris, when a description was published in the *Transactions of the New Zealand Institute*.* The plants found at that visit were confined to old Paleozoic rocks on one of the small islands of the group. Mr. ROBERT MAIR has recently discovered a few plants on another island; and Mr. T. F. CHEESEMAN has found a single plant on the largest island, which is entirely volcanic. The plant forms a small tree from 12 feet to 25 feet high, with stout branches; it is charged with a peculiar resin in all its parts, and the bark is easily wounded, producing large callosities as it heals. The leaves are alternate, crowded near the extremities of the branches, and carried on long leaf-stalks, which vary from 4 inches to 14 inches in length, the blades being from 9 inches to 20 inches long, many of the leaves were 30 inches long, including the leaf-stalk, and from 4 inches to 10 inches broad, equally rounded at both ends, or slightly contracted below the middle, with the margins slightly wavy, and strengthened by a remarkably stout marginal nerve. They are of a thick texture and bright-green colour. The male and female flowers are developed on separate trees, and are arranged in panicles from 8 inches to 16 inches long at the extremities of the branches. *Meryta Sinclairi* is of great value as an ornamental tree, and is easily cultivated in Auckland, Taranaki, and Hawke's Bay, but is unable to resist the light frosts experienced at Wellington. It is easily propagated from seeds, and, under cultivation, makes a handsome symmetrical

tree, very different in habit from the somewhat naked irregularly-branched trees on the Taranga Islands. The finest cultivated specimen is one raised by Mr. Justice GILLIES from a cutting brought from the Taranga Islands in 1869. Its present height is 25 feet, the trunk is 4 feet 8 inches in circumference, and the spread of its branches 28 feet. *Meryta Sinclairi* is only known with certainty to be found on two or three islands of the Taranga group, opposite the entrance of Whangarei Harbour, in the province of Auckland district. It is reported to grow on the Poor Knights, further to the north, and may possibly occur on one of the Three Kings Islands, about thirty miles from the North Cape." A specimen of the tree, 3 feet in height, is now in the Temperate House at Kew.

MONOGRAPHS OF AFRICAN FAMILIES AND GENERA.—Professor ENGLER has issued, through ENGELMANN of Leipzig, a monograph of the African Moraceæ, exclusive of Figs. It is a quarto of forty-nine pages, with numerous illustrations in the text, and eighteen lithographic plates. *Dorstenia gigas* is a curious species, about 7 feet in height, and with its stem dilated into a broad, flask-like form, and dividing into many branches at the apex.

"AMERICAN GARDENING" is now published as an independent horticultural periodical by JAMES W. WITHERS, 136, Liberty Street, New York. Mr. LEONARD BARRON continues as Editor.

HYACINTHS AND ONIONS ON THE STOCK EXCHANGE.—Intense enjoyment is derived by the miscellaneous mining market from its new Hyacinth game. About a week ago two of its members entered into a competition as to which would grow the best Hyacinths. The bulbs were duly bought, but the matter getting noised abroad, those of one competitor were abstracted, and Onions substituted. The bulbs were taken home to be planted, but the household of the victim discovered the plant, and the event has now been embodied in a song by the market poet. To the tune of *Poor Cock Robin* the elegant stanzas are poured forth with immense effect, and when a dark-green Hyacinth glass was introduced into the market for paper-ball practice, the enthusiasm knew no bounds. *Westminster Gazette*.

"AN OLD ENGLISH GARDEN."—This account of an Essex garden, by the Countess of WARWICK, will be illustrated by numerous fine photogravure illustrations of Lady WARWICK'S garden, near Easton, Essex. Three hundred and fifty copies only will be printed, and the book will be ready in the course of November. BERNARD QUARITCH, 15, Piccadilly, London, W., is the publisher.

PROTECTION OF FRUIT AGAINST PARASITIC FUNGI.—Herr A. TSCHOKKE describes the mode in which cultivated fruits—especially species of *Pyrus*, *Malus*, *Sorbus*, *Cydonia*, and *Mespilus*—are protected against the attacks of parasitic fungi, among which the most destructive are *Monilia fructigena*, *Botrytis cinerea*, *Penicillium glaucum*, *P. olivaceum*, *Mucor pyriformis*, and *M. stolonifer*. None of these fungi can penetrate the uninjured cuticle. By the growth of the fruits the stomates by which they enter become very sparsely distributed, and largely converted into lenticels. There is frequently a general or local formation of cork-layers, as in the Russet Apple. But since it is very rarely that the epiderm is not locally injured, the chief protection against fungi is the chemical nature of the fruit itself, especially the presence of tannic and malic acids in the peripheral layers of cells. *Landwirthsch. Jahrb. der Schweiz.*, vol. xi., p. 153.

"RIVIERA NATURE NOTES." By C. C. A popular account of the more striking plants and animals of the Riviera and the Maritime Alps. (Post 8vo, with numerous illustrations, especially of the garden at La Mortola, annotated by Commendatore Hanbury, to whom the work is dedicated; cloth, 7s. 6d.; 1898.) "These natural history notes have been collected during a long residence on the Riviera. As many as twelve summers were spent in the villages of the

Maritime Alps; so that the mountain and the alpine regions are as familiar to the writer as the sheltered coast which he has known since the year 1859. As the usefulness of a book of this sort depends in great measure on the index, it has been made very complete. Dr. ALLEN STURGE has been good enough to contribute an article on the 'Prehistoric Men of the District,' a subject on which he is an authority." *Extracts from Preface.*

LORD BROUGHAM'S BOOK ON THE ROSE.—The Prince of WALES has accepted the dedication of the very elaborate and beautiful book on Roses, written by Lord BROUGHAM, who is the owner of a charming garden on the Riviera, while the rosary at Brougham has long been famed.

HONOUR TO A SCOTTISH GARDENER.—A well-merited honour has just been conferred upon Mr. WILLIAM FOWLER, who has been widely known among horticulturists in the border counties of Scotland for more than a generation, as the able gardener at Mertoun, the beautiful seat of Lord POLWARTH, on the banks of the Tweed, in Berwickshire. About forty years ago, the present Earl of HADDINGTON, then Lord BINNING, taking a kindly interest in the welfare of the residents on the family estate of Mellerstain, where he resided, in the neighbourhood of Mertoun, started among other things designed to improve their social life and comforts, a flower show, at which Mr. FOWLER has acted as a judge for thirty-seven consecutive years—a record that has rarely, if ever, been exceeded in the annals of horticultural shows. From the beginning to the present time, Lord HADDINGTON has taken a personal interest in these shows, making a point of being present at the annual event, superintending the arrangements, and at the close paying the prizes to the winners, and giving all a kindly word of encouragement. To mark his personal esteem, and his high appreciation of Mr. FOWLER'S services as a Judge at Mellerstain Flower Show, Lord HADDINGTON has presented him with a valuable gold watch, in recognition of his faithfully discharged duties for the long period of thirty-seven consecutive years. May both giver and receiver be long spared to carry on the good work, and furnish examples worthy of imitation on every estate in the country.

ALLOTMENTS FOR HILLINGDON.—At the last meeting of the Hillingdon (Middlesex) Parish Council, it is reported that arrangements had been finally concluded with Lord HILLINGDON, by which His Lordship would lease to the Council for twenty-one years, five acres of land in Hillingdon for the purpose of allotments. His Lordship required that no pigsties, toolhouses, or buildings, should be erected on any plot except with his sanction, but beyond this he has made no restrictions. He at first required that the minimum size of the plots should be ten poles, but subsequently gave way on this point, and the Council are free to allot the land as they like. In view of the cost, the charges to allotment-holders will work out probably at the rate of 43s. 9d. per acre. The Local Government Board have been asked to sanction what has been done, and also bye-laws for the management of the land.

NOTICES OF BOOKS.

L'ART DU FLEURISTE AND LA MOSAÏCULTURE. (Librairie Horticole du Jardin, 167, Boulevard St. Germaine, Paris.)

THESE two handbooks, by M. Albert Maumené, may be mentioned together. The former begins with a chapter devoted to the use of floral decorations in past times, and then passes on to the subject of present-day supply of and demand for flowers. M. Maumené next gives descriptions of various decorative arrangements for indoor and for outdoor use. Chapters on mounting and arranging flowers should prove of practical value to many florists, those of our own country included, as here we too often see the finest blossoms grouped in a heavy inartistic manner.

* *Trans. N. Z. Inst.*, vol. ii., p. 101.

The Handbook on carpet-bedding opens with a history of the practice, following which we find many elaborate designs, lists of the best plants for "mosaïques," with instructions as to growing and regulating them at the different seasons of the year.

We should add, that both these volumes are fully illustrated, and we hope soon to see a translation adapted to our own requirements. That there is room for such a book is shown by the frequent enquiries we receive on the subject.

TWO BOOKS ON TIMBER MEASUREMENT.

MR. E. A. P. BURT has compiled two volumes, which are likely to prove of great practical value. Round Timber Measurement, Weight Tables for Railway Rates, and Guide to Round Timber Cubing Rule, Bark and Railway Measurement Weight Calculator, include tables which show at a glance results

Some of the attacks mentioned have long been known, but there are few, if any, of these concerning which we have not gained some additional information during the past few years, and of many of the others we have only lately become possessed of the whole life-history; whilst others again have lately shown themselves as perfect scourges (in our present large scale of fruit growing), which even within the last four or five years were wholly unknown to us as fruit pests. Among these may be mentioned the attacks of the flat shot-borer beetles in Plum trees; those of the "ground beetles" in Strawberry fruit; or again, of the eel-worm, which causes distorted growth of the Strawberry-plant.

In addition to the accounts of damage by insect attacks, observations are also given of a few other kinds of infestations, such as injuries by Phytophthoræ, or gall-mites, and nematoid worms; and also, and very especially, the infestation known as rust or

fruit is excellent for kitchen use at mid-winter, and the tree fruits regularly, but it is generally every third year that the crop is a full one. The soil is a stiff loam overlying limestone. Those of your readers who can find space for a tree or two of this Apple would not regret planting it. The fruits sent are fair samples (fig. 109). H. J. C., Grimston, Tadcaster.

HOME CORRESPONDENCE.

CHRYSANTHEMUM-RUST.—"It is my opinion," said a famous grower to me the other day, "that the 'Mums' have reached their limit, and the rust has come to keep them down." Well, what in the future may bring it is vain to prophesy; but seeing that some plants have the fungus disease badly, growers have grounds for apprehension. That it should have appeared in so many widely-separated places almost simultaneously is a remarkable fact, and now that it is at home with us, what measures will have to be used in defending the plants from attack? Cultivators are not of one mind as to remedies, and we can scarcely hope to stamp it out altogether. Further trials of antidotes must take place ere it can be said with certainty that such and such a remedy is effectual. It is to be hoped that no affected plants will be used for propagating purposes till every leaf is removed, and new shoots appear, after at least a month or six weeks' sojourn of the plants in cold frames. W. S.

COCCUS ON BEECH TREES.—Possibly there may be a confusion of terms. At any rate, the insect described by Mr. Divers (p. 354) which produces the cottony secretion on the fronds, is no "aphis," but a "coccus," known as *Pseudococcus fagi*. It is interesting to know that the carbolic emulsion used in this instance saved the tree. As a rule, this pest is one of the worst of all to eradicate, and I have been accustomed to look upon a tree once badly affected as doomed within a few years. Mr. Levett is perhaps alluding to some other insect when he says it hibernates under the soil on the top of the roots. It may be that both your correspondents are influenced by the secretion, which resembles that of the American blight, which is an "aphis." R. McLachlan.

THE AMERICAN BLIGHT: AN HEROIC REMEDY.—An American writer has stated, that in winter petroleum may be brushed into the rough old bark of the tree and set fire to without damage to the tree itself. This, of course, destroys the eggs, which washes and emulsions often fail to do. Someone here may be bold enough to repeat the experiment, but he will probably choose some subject the loss of which would be of little importance. The Beech-coccus might be experimented on in a similar manner. R. McLachlan.

NARCISSUS VIRIDIFLORUS.—I am much interested in reading Mr. C. Wolley Dod's reference to this as a difficult plant to keep. I have had my present stock for twelve years, and although the bulbs are now fewer than they have been, it is not unlikely that they will increase in numbers with a little attention. Among other out-of-the-way species, I have had *N. pachybolbus* for fourteen years, and *N. dubius* for eight. *N. Broussoneti* I happen to have lost, but it is a plant I usually have. R. I. L., Bot. Gard., Cambridge.

YOUNG GARDENERS AND THE R.H.S. EXAMINATIONS.—I notice one of your correspondents, "A. D.," writing in the *Gardeners' Chronicle*, p. 354, in respect to the disadvantages of young gardeners entering the above examinations. I quite agree with him that young gardeners are very much handicapped when placed by students from colleges and laboratories. But according to "A. D.," the young gardener he mentions is better off than some, having the advantage of attending lectures, therefore he should not be discouraged. I and two more gardeners who entered the last examination (not even having had the advantage of attending lectures), received Second-class Certificates. Our practice was to meet for a few hours' quiet study each week during the winter, with the above result. So we have the satisfaction of knowing that we scored off our own bats. B. G. S., Vale Garden, Northwich.

LEONOTIS LEONURUS.—Besides the method mentioned in the *Gardeners' Chronicle*, p. 350, another useful way of treating this plant is by giving cultiva-



FIG. 109.—APPLE LEWIS' INCOMPARABLE
(Reproduced from a specimen sent by Mr. Clayton.)

which otherwise could only be arrived at after considerable calculation. These books, therefore, are likely to save both time and trouble, and should meet with consequent appreciation. (Ryder & Co.)

INSECTS INJURIOUS TO ORCHARD AND BUSH FRUITS.

THE fruit growers of this country owe a debt of gratitude to Miss E. A. Ormerod for a very important work she has just issued, comprising 280 pages, on *Insects Injurious to Orchard and Bush Fruits, with Means of Prevention and Remedy*.*

In the preface the author says she has endeavoured to collect into a convenient form for reference the most important points of information which we possess regarding the life-histories and habits of the insects of which the attacks are commonly injurious to a serious extent to hardy fruits in this country, together with notes of methods of prevention, and remedy which have been found serviceable at a paying rate.

* London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. Price 3s. 6d.

red-spider, of which more information was much needed where it would be easily attainable for general reference.

So far as our experience shows, the protection of our fruit crops from insect ravages is likely to be an increasing difficulty, consequent on the increasing extent of the areas in which one kind of orchard-tree or fruit-bush is grown year after year, thus giving every opportunity for the established settlement of the insect-feeders on that special crop.

We confidently recommend this handbook to our readers, which, it is hoped, may help, in some degree, to preserve a fair amount of our fruit crops from insect depredations, and give a fair return to the growers for their great outlay.

LEWIS' INCOMPARABLE APPLE.

I HARVESTED this year the crop of the above variety from a large tree growing at Grimston, which amounted to about 30 stones in weight. The tree is fully 100 years old, and of large size, and has a stem of 5 feet in girth at 3 feet from the ground. The

tion somewhat similar to that followed with the *Chrysanthemum*, with the exception that the plants should have a little warmth during the earlier stages of growth. By retaining and cutting back one or two plants after flowering, a plentiful supply of cuttings may be obtained in the spring. After these are rooted they should be grown on in an intermediate temperature for a time, but as the season advances transference to a cold pit is advisable. During the earlier stages, as growth proceeds, if the points of the shoots are pinched out twice it will conduce to a more bushy habit of growth. Pot on into larger pots as required until a diameter of about 8 inches is reached, a suitable size in which to flower the plants. From June to the end of August the plants should stand out of doors. Given this kind of treatment, *Leonotis leonurus* will grow to a height of about 3 feet in one season, and flower profusely. It is useful for conservatory embellishment during the month of September. In hot, dry weather, red-spider is apt to infest the plants. These remarks apply to the warmer parts of this country. *James Baxter, Boldre Grange Gardens, Hants.*

THE DISQUALIFICATION AT THE N. C. S. SHOW.

—That the judges were justified in disqualifying Mr. Lees' blooms there can be no doubt. But could not they have legitimately given the competitor the privilege of substituting another bloom if he had a distinct variety in his possession? Mr. E. Molyneux and Mr. Orchard took this course at the Portsmouth show, and allowed a competitor (Mr. Agate) to change a bloom, thus avoiding disqualification. I must add, however, that last year another exhibitor (Mr. Foster) was disqualified by the same judges unconditionally for the same blunder. What was the judges' duty in one case was not apparently theirs in a similar one. I do not think any of my fellow competitors would have objected if the more lenient course had been adopted in Mr. Lees' case. There is another point about the N. C. S. show; one of the judges was seen assisting an exhibitor to stage his blooms, and an hour or so afterwards was judging that very class. Another judge was questioning exhibitors in the Japanese classes while they were staging their flowers, and had subsequently to judge those classes. Really, it would appear that judges should not be allowed in the building before the exhibits have been staged, and the competitors have retired. *A Competitor.* [Of course not. Ed.]

HARDINESS OF CROCOSMIA AUREA.—In reply to a question on p. 324 of the *Gardeners' Chronicle*, I am afraid this bulb and its variety *italica* are less hardy than *Tritonia* (*Montbretia*) *Potsii*, and from their more erratic habit would be less easy to protect in winter by littering the surface. I have had *Crocsmia* out for three winters, and neither this nor any of its hybrids with *Tritonia* has been killed; but the winters here have been mild, and I put a foot of Pine-needles over the bulbs, nearly to the top of the stalks, which are never cut down till spring. I do not believe that either *Crocsmia* or *Tritonia* would survive without protection three weeks' severe frost, descending a foot or more into the soil. But it is easy to lift the *Crocsmias* in November, and pot them roughly and hastily three in a pot, and bury them 2 feet in an old rubbish-heap, or any place where they will get neither dry nor heated. *C. Wolley Dod, Edge Hall, Malpas.*

AUTUMN VERSUS SPRING DIGGING.—I was much interested in some remarks which appeared in the *Gardeners' Chronicle* last year under the above heading, and to test the matter for myself, I had two pieces of land in our orchard manured in the same manner. Some growing Mustard was dug in, and a light dressing of half-decayed stable-manure was given. The pieces of land were 120 yards long, and 6 yards wide. One piece was dug before Christmas, and the other in March. The kind of soil is a light sandy loam. I had both lands planted on the same day with the same variety of Potatoes, and at lifting time, on measuring the respective yields from the winter and spring-dug ground, I found no difference in quantity or quality. The lesson this experiment appears to teach is, to do the digging when the weather is favourable; and as this applies in my case to light ground, it is, I consider, important to throw up stiff and heavy ground to the action of the winter frosts and winds, and to give the soil a full opportunity to absorb the free nitrogen from the atmosphere. I may add that the allotments in our parish are mostly stiff, heavy land, and the man who was the most successful exhibitor at our local show, both for produce and general culture, always had his ground dug before Christmas. *R. M., Newbury.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 8.—*Present:* Dr. M. T. Masters, in the chair; Rev. W. Wilks, Mr. Michael, Prof. Church, and Rev. Prof. Henslow, Hon. Sec.

Potatoes with Scab.—With reference to some diseased tubers received some time back, Dr. W. G. Smith (Leeds) reports as follows:—

Almost simultaneously with receipt of specimens from the Scientific Committee, other specimens were received from the *Gardeners' Chronicle*. Both sets of material showed a well-marked form of "scab" involving the tip or growing end of every tuber. Freshly-cut sections showed a mycelium inside the tubers, both in discoloured and normally coloured parts. The first result of cultivation was an abundant crop of a Mucor (white mould), which soon passed into the zygosporous resting stage. An abundant crop of bodies of a fungus nature were also present about this time in active growth. Later several other fungi appeared. The rotten parts showed the presence of bacteria, white mites, and nematode worms. *Phytophthora* was not met with in course of the examination.

The "scab" disease has been ascribed to (1) various fungi; (2) bacteria; (3) nematode worms; (4) mites; (5) an organism of a slime-fungus nature (*Pseudocommis*). The material examined was not suited to discriminate the actual cause of the disease, because four of the above agencies were present in company. The presence of a fungus mycelium in freshly exposed sections inclines me to give the precedence to some fungus. In the cases examined, moss-litter from a stable was used largely in one case; the other had also been manured with moss-litter manure, but the source and quantity are not stated. This would seem to indicate that such manure offered good nourishment to the fungus. Comparing my results with other cases recorded, I am inclined to think that the fungus (another cause) came from the soil.

Investigations on Potato-scab have been often made in the United States, Belgium, Germany, and France. No definite cause has as yet been fixed on, but experiments in preventive treatment have been fairly successful. Of the latter the following have been tried in the United States and in Europe:—

1. Corrosive sublimate—the favourite substance used in the United States. When seed-tubers are treated before planting out with one part of the sublimate in 1000 of water for one to two hours, good results generally follow, although some experiments on badly infested land were negative.

2. Sulphur—also an American favourite remedy. The seed-tubers are thoroughly dusted with flowers-of-sulphur before planting. One authority speaks highly of good results from 300 lb. sulphur per acre applied in the open row, like artificial manure, from a drill distributor. The same writer is also in favour of a mixture of sulphur and kainit at the rate of 8.0 lb. per acre.

3. Kainit, for application to land known to be infested. This seems to me a safe cure, and it is favourably reported on.

Fruiting of Akebia quinata.—Foliage and ripe fruit of this berberidaceous climber were received from the Dowager Lady Bowman. They were grown in the open at Joldwynds, near Dorking. It is a native of Japan, and, as a rule, does not perfect its fruit in this climate.

Cyclamen europæum with long Rhizomes.—Some plants were sent by Rev. C. Wolley Dod, showing how this plant can produce its tuber several inches below the surface, by means of a long rhizome penetrating vertically through the surface-soil. At the base of the rhizome was the globular tuber. Perhaps this may have resulted from the prolonged drought, so that the tuber might be produced away from its influence.

Proliferous Teasel Head.—Dr. Masters exhibited a specimen in which the bracts of the summit had become foliaceous. An examination by Mr. Massee of the tissues showed the presence of the fungus *Sclerotinia libertiana*, both the sclerotia and the botrytis form being present. The probability is that the fungus has stimulated the bracts into their abnormal growth.

Cankered Apple-trees.—Dr. Masters also exhibited branches of Apples swollen by Mistletoe, but within cracks of the bark there was present the fungus *Nectria ditissima*. He remarked that removal of the grass, through loosening the soil about the roots by forking it over, and by applying manure, the canker had disappeared from the trees so treated.

Lavender with dimorphic leaves.—Dr. Masters called attention to sprays of Lavender on which the majority of the leaves were small, grey, with stellate hairs, and with inrolled margins, these characters being acquired by many plants frequenting arid and hot regions. Some of the leaves, however, were much larger, dark green, and flat, such being characteristic of plants in a moister climate. The different appearance of the latter is caused, according to Prof. Henslow, by there being much fewer hairs, and these, instead of having long and very slender branching rays, have only extremely short ones, with scarcely any branches; consequently they scarcely overlap each other, and so reveal the green chlorophyll below and between them. With regard to the stomata, they are about equally and very sparingly distributed. They occur on both sides of the leaves.

Potatoes blackening when boiled.—Mr. Rd. Morse forwarded raw and cooked Potatoes, to show the difference in those

cocked as grown in a field and in the garden. The latter were much blackened, but not the former. They were the variety Windsor Castle. The soil of the field sent was very red from the presence of iron, consequently there was very little doubt that the tannic acid, being liberated by boiling, united with some salt of iron imbibed, producing tannate of iron, the usual ingredients of ink. Beyond being somewhat unsightly, nothing of a deleterious character was present. Mr. Michael observed that it was of common occurrence in the peaty soils of Skye, and even preferred by the local inhabitants.

A Monstrous Begonia.—Dr. Masters showed a male flower, which the central axis was prolonged into a small funnel-shaped structure on a slender pedicel (see fig. 107, p. 365). Similar structures are not uncommon, as foliar excrescences from the ribs of Cabbage-leaves, and the ovules of Mignonette, have been transformed into similar funnels or cups, as described by the late Rev. Prof. J. S. Henslow.

Structure of the Seeds of the Indigo Plant.—Professor Church alluded to a curious discovery he had made in investigating the seeds of some wild species of Indigofera, as *linifolia*, *cordifolia*, and others. He found that sections of the embryos showed a marbled surface, having brownish patches, due to the colouring matter erythrophyll. On boiling crushed seeds to test for starch, not any was found, 33 per cent. being albuminoid matter; hence these are the most nitrogenous of all leguminous seeds known. On the solution being left, the true indigo-blue separates and becomes insoluble. Thus, there are two quite independent colouring matters in the same seed. The solution being red, the blue formed a ring round the porcelain vessel containing it.

NATIONAL CHRYSANTHEMUM.

The reference made in the *Gardeners' Chronicle*, p. 339, to your excellent leader of the previous week, alluding to the recent action of the National Chrysanthemum Society's Executive Committee, has most assuredly emanated from one who is behind the scenes, and acquainted with the inner working of the Sub-committee, as well as of the work of the executive body. While I in a measure am in agreement with your correspondent that "financial considerations" was one of the points by which they were "actuated," I can cheerfully state, as a member of that Sub-committee, that to attain nobler objects was also our aim; the elevation of the tone of the Society, by endeavouring, as far as possible, to procure a more congenial home, where the magnificent contributions sent for exhibition could be better seen, and more agreeably enjoyed.

Since the Jubilee banquet, November, 1896, several of the members who were appointed on the Sites Sub-committee have been most desirous of furthering, as far as lay in their power, the wishes and suggestions then made at the Hôtel Métropole by the Vice-Presidents, Sir Trevor Lawrence, Bart.; F. A. Bevan, Esq.; C. Harman Payne, Esq.; and other supporters of the Society.

Unfortunately for those of the executive who upheld the views expressed by those gentlemen, they have never received any sympathy or support (in trying for a better home) from the leading officials of the Society. Your correspondent questions the correctness of the allusion you made to the sub-committee's "almost unanimous recommendation," for a change to the Crystal Palace. That sub-committee consisted of five elected members and four officers *ex officio*, i.e., the Chairman, Vice-chairman, Treasurer, and Foreign Corresponding Secretary. From first to last the Foreign Corresponding Secretary took no part in any of the sub-committee's proceedings, and expressed no wish openly or otherwise for the change; therefore, in my opinion, your correspondent had no right to include him as opposed to the recommendation. The Chairman was also absent from the meeting on the night the voting took place, and as he never has openly expressed to the sub-committee his opposition against removing, your correspondent should not include him as voting against it.

It will thus be seen that when the recommendation was agreed to, two of the committee were absent, seven were present, all taking part in the proceedings. Six voted conscientiously for a removal (the five elected members), and the Vice Chairman, and one, the Treasurer, against. The information you gave, I hold, was therefore "quite correct."

Any one of the deputation that waited on Mr. Gilman, the manager of the Crystal Palace, cannot be reasonably blamed if they arrived at the same conclusion as I did, that both Chairman and Secretary were not then, to all outward appearances, adverse to the Society's removal to Sydenham, and in many cases they favoured the facilities so kindly and courteously assented to by that gentleman.

Your correspondent's allusion that Mr. Dean's "long experience" should "count for something," had nothing to do with the question at issue; he had no vote, and he accepted his appointment as general secretary on those conditions, but assuredly his abilities could be better seen, and his "long experience" more fully appreciated in a building where greater space, better light, and freedom from noise are found, and where the devotees of the autumn queen of flowers could worship in peace and quietude.

The question of table space raised is also somewhat beside the mark, still, all or more could be erected at the Crystal Palace with better advantages than can ever be obtained at the Royal Aquarium. It is true that shows held there are now "well-known London fixtures," but does that go to prove that the building in which they are held is either the most suitable or the best place to hold a gigantic floral display in. More than two decades have passed away since the

exhibits of the society were first located therein, and what at that time may have proved both suitable and convenient for the society's work has, by later experience, proved more or less objectionable.

Financially, the National Chrysanthemum Society has been able to make but little headway. The reserve fund of the Royal Aquarium during the past six years has been built up to £20,000. Contrast with this the reserve fund of our society after twenty-two years' labour under the same roof; we can only boast of £58. In comparison with the attendance at large provincial Chrysanthemum societies, we know that the Royal Aquarium must in November make a large profit by us. Should this then not show that "financial considerations" which your correspondent uses as a weapon against us, was a right and proper subject for us to consider? The "success and prosperity" that have followed the work of the National Chrysanthemum Society have also greatly enriched the exchequer of the Royal Aquarium. The status made for the society has also been the means whereby the substance has been secured for the directors of that company, while we have too long been content with the mere shadow.

It is regrettable that what is by some considered the most influential special floral society in the world should be fettered to a home where neither space, light, or comfort have been adequate during recent years. Yet under such conditions, we are again told that "the knowledge that the association of the Society and its exhibition with the Aquarium has done so much to enhance its success and prosperity." "Tut, tut!" This success and prosperity is not, in my opinion, the result of the building, or even its "central position," or the "bountiful" assistance received for services rendered; it arises mainly from the popularity attached to the flower, and to the unflinching enthusiasm and attention which is brought to bear in perfecting its culture, both by the able help of the gardening press and the multitude of intelligent cultivators in almost every part of the civilised world.

Had the present National Chrysanthemum Society commenced its career under better auspices and on independent lines, I venture to assert that its financial position to-day would have been something to be proud of. For these reasons, I maintain that we ought to receive from the directors of the Royal Aquarium the value of our labours annually, and in proportion to the profits they yearly reap through our exhibitions. *J. W. Moorman, Victoria Park, November 7, 1898.*

NOVEMBER 14.—The Floral Committee of this society met in the gallery of the Royal Aquarium on Monday last, when there were many novelties of first-class quality exhibited. The nine following varieties were awarded First-class Certificates:—

MRS. W. HOWE, an incurved, well-built flower of a peculiar and attractive shade of yellow. It was shown by Mr. W. Howe, gr. to Sir H. Tate, Bart., Park Place Gardens, Stratham, who has no knowledge of the variety's origin, being unaware how he became possessed of the three plants.

MISS ANNIE HILLS, a magnificent incurved, possessing the best qualities of this section, and most typical broad florets. Should the flowers eventually prove to be a little more conical in shape than were the twelve fine blooms that were shown, it will be an advantage. The colour is white or bluish, and the flower is not unsuggestive of a bluish Queen of England. Shown by Mr. H. Weeks, Thrumpton Hall Gardens, Derby.

C. S. BATES (incurved). This is a very fine shade of yellow, near to old-gold. The flowers shown were large, but hardly so truly incurved as might be wished. Possibly the variety was not shown in its best form. From Mr. R. Owen, Maidenhead.

HANWELL GLORY (incurved), a very promising buff-coloured flower, of satisfactory build. From Mr. W. Seward, The Firs, Hanwell.

H. J. JONES (Japanese), this intensely rich crimson-flowered variety will undoubtedly cause a sensation. It is of full exhibition size, the florets are moderately broad, very freely produced, do not incurve, but rather reflex a little towards the tips, and the whole flower is a mass of the richest bright crimson. The only suspicion of buff is in centre of flower, where the last florets are unfolding. From Mr. W. Seward, The Firs, Hanwell.

MADAME GABRIELLE DEBRIE (incurved Japanese), this is a delicate fleshy pink-coloured flower, with wide florets, and in build of the same type as Louise. (H. Cannell & Sons, Swanley.)

MADEIRA DAVIS (Japanese), a pretty flushed or tinted flower of large size, and possessing a fine centre. The build is somewhat suggestive of Pride of Exmouth. From Mr. W. H. Lees, Trent Park Gardens, Barnet.

JNO. POCKETT (Japanese), this very fine Australian flower, crimson, with buff or bronze reverse, has already been described in these columns. It is a very desirable acquisition, the florets are wide, and the crimson and buff is almost equally displayed over the flower. From Mr. W. Wells, Earlswood Nurseries, Redhill.

LE CHALONAIS (Japanese Anemone), a very pretty yellow-coloured flower, of moderate size and good form. In the cushion the yellow is intermixed a little with a reddish tint. From Mr. H. J. Jones, Ryecroft Nursery, Lewisham.

Other interesting novelties included Mrs. A. Kember (Commended), a yellow sport from Mrs. Dr. Waid, from Mr. A. Kember, Gosfield Hall, Halstead; P. R. Dunn, a white-flowered Japanese Anemone; Mrs. W. Bird, a fine crimson single-flowered variety; Yellow Eva Knowles, which the committee wished to see again; and Joseph Chamberlain,

certificated last year, all from Mr. H. J. Jones; Golden Shower, What Ho, and other very distinct, "spidery," decorative, varieties from Mr. J. H. Witty, Nunhead Cemetery. It is probable that the variety Golden Shower, the petals of which are like mere threads, and fall immediately down around the flower-head, would have been given a certificate had the committee's requirement been complied to in regard to plants of decorative varieties, being shown in addition to blooms. Mrs. A. H. Hall, large yellow flowered Japanese, and J. C. Waterhouse, also a yellow Japanese, but less smooth in outline and deeper in colour, from Mr. A. H. Hall, Prestbury.

Several colour sports from Source d'Or from Mr. H. Holmes, King Street, Norwich; Pearl Palace (incurved), from Mr. R. Owen; and Mrs. Grogan, a grand, rose-coloured flower suitable for market or decorative purposes, from the Brighton and South Coast Nurseries, Worthing. The committee wished to see plants of these. Mr. W. Wells had fine blooms of Chatsworth, Nellie Pockett, and Mr. T. Carrington.

NORTH OF SCOTLAND ROOT, FRUIT, AND VEGETABLE ASSOCIATION.

NOVEMBER 5.—The annual show of roots, fruit and vegetables, in connection with this Association was held on the above date, in the new Drill Hall, Inverurie. The weather was exceedingly fine, and in the new Hall and outside grounds the display of produce was seen to advantage.

Of garden produce there was an exceptionally fine display. Fruit did not make a large display in the aggregate, but the general quality of the Apples was very good. The chief prize-takers in this section were Mr. T. MIDDLETON, gr., Monymusk House; A. CAMPBELL, A. MIDDLETON, A. BEATON, and J. OOSTON, Bourtie House.

The display of vegetables was the finest that has been seen at Inverurie for many years.

The usual dinner of the Association was held in the Gordon Arms Hotel in the afternoon, and was very largely attended.

ISLE OF WIGHT.

SHANKLIN.

NOVEMBER 8.—The Shanklin Chrysanthemum Society held their annual exhibition, and although a falling off in the number of exhibits was evident, the good quality of previous years was fully maintained. The principal prize-winners were Messrs. M. Silsbury, G. Burt, W. Howard, S. Prissall, E. Rayner, C. Orchard, G. Kingswell, G. Jolliffe, S. Banks, and W. Morris.

EAST COWES.

The East Cowes Horticultural Improvement Association held their first annual Chrysanthemum show in the Town Hall on Wednesday last, when some very fine groups of these plants were staged by Messrs. M. Hunt, W. Hills, A. Hills, and C. Martin. The principal prize-winners for cut blooms were Messrs. A. Hills, T. Burne, W. Broadwater, F. Fry, J. G. Oatley, and C. Coombes.

VENTNOR.

The annual show in connection with the Undercliffe Chrysanthemum Society was held on Thursday and Friday last. The show was considered a very great improvement upon last year's exhibition. The principal prize-takers were Messrs. C. H. Snook, H. Dover, F. Woods, W. Howard, W. Miller, W. Russell, W. W. Sheath, F. Attrill, D. Day, A. E. Gell, W. Gee, and A. Richards.

HIGHGATE CHRYSANTHEMUM.

NOVEMBER 8, 9, 10.—The fourteenth annual exhibition of the above Society was held at Holloway Hall on the above dates, and proved very successful. In every respect it was a great advance on previous years. This year, 960 exhibits were staged, as against 800 last year; and the cut blooms numbered 2040, as against 1583 for 1897.

The spacious Holloway Hall was completely filled, and the smaller hall had to be used in addition for staging the cottagers' exhibits. The Japanese cut blooms were large and of good colouring, all the best known varieties being represented. Some of the incurveds, too, were praiseworthy, and Pompons and Anemones were represented. Table decorations were numerous, and of good quality; and the same may be said of bouquets and baskets of Chrysanthemums with Ferns, grasses, and foliage.

The groups were not numerous, but the plants were good specimens of the best varieties, and in the case of trained specimen plants, there were some exceptionally good exhibits.

Mr. J. Brooks, gr. to Mr. W. J. NEWMAN, of Totteridge, for the second time in succession, won the Ten-guinea Silver Cup, given by Mr. H. R. REGNART, with forty-eight Japanese blooms of not fewer than twenty-four varieties; while Mr. J. Brooks, gr. to Mr. WALTER REYNOLDS, J.P., Highgate, carried off the 1st prize for groups and trained plants. The cottagers' exhibits were all very creditable indeed, and one of the judges declared that the six specimen plants staged by Mr. F. J. WRIGHT, of Salisbury Terrace, Finchley, could not be beaten by any cottager.

Amongst cottagers' exhibits was a basket of Custard Marrows shown by Mr. TOMLIN, of Finchley, which had been grown from seeds obtained last year from Philadelphia.

COVENTRY CHRYSANTHEMUM.

NOVEMBER 8, 9.—A very pretty show was held on the above dates in the Market Hall, Coventry, which, though not a very suitable place, willing hands had helped to give it a pleasing aspect by means of curtains, and Palms and other plants of large size, kindly lent for the occasion by gardeners who were members of the committee, and their employers.

GROUPS OF CHRYSANTHEMUMS

were well shown in the competitive classes by Sir R. MOON (gr., Mr. Morris), who secured the 1st prize, and by W. H. HERBERT, Esq. (gr., Mr. Blake), who was 2nd. A. JAMES, Esq. (gr., Mr. Chandler), easily secured 1st place in the cut bloom classes for twenty-four Japanese, and for twenty-four incurved varieties.

A fine display came from Lord LEITCH's gardens, Stoneleigh Abbey (gr., Mr. Martin), consisting of excellent fruit and vegetables in season.

Some excellent blooms of Chrysanthemums also came from Mr. MARTIN, of Stoneleigh Abbey Gardens.

Messrs. PERKINS, florists, of Coventry, contributed a number of artistic articles worked out in flowers and greenery, the Chrysanthemum forming appropriately a considerable proportion of the flowers employed in their construction.

Mr. FINCH, nurseryman, erected a lofty arcadian group in the centre of the hall, and this was very effective, surmounted as it was with Palms, and intermingled with Codæums, Dracenas, Eulalias, Orchids, and other plants. The same exhibitor contributed floral decorations in variety.

BIRMINGHAM CHRYSANTHEMUM.

NOVEMBER 8, 9, 10.—The annual show of the above Society took place in the Bingley Hall. The exhibits on the whole were very satisfactory, but the cut blooms of Japanese varieties were hardly so large as usual. The incurved flowers were bright in colour, and large in size. We think, also, that they were better dressed than is usual at Birmingham. Trained specimen plants were as good as formerly.

PLANTS.

For nine plants of large flowering incurveds, Lady MARTINEAU, West Hill (gr., Mr. O. Brasier), was the winner of the 1st prize. She had capital specimens of Prince Alfred, Golden Empress, C. H. Curtis, Queen of England, R. C. Kingston, Empress of India, Lord Alcester, Jardin des Plantes, and Lord Walseley; Mr. G. CADBURY, Northfield, Birmingham (gr., Mr. J. Maudrum), was 2nd.

For six plants, Mr. G. CADBURY was 1st.

For six plants (Japanese), Lady MARTINEAU won; fine plants were included of Duchess of Wellington, Col. W. B. Smith, and Australia.

The best plants in the show were staged in the class for three Japanese specimens, and these were from Mr. G. CADBURY.

The best group of Chrysanthemums, with foliage plants, to occupy a space of 20 feet by 12 feet, was from Mr. Geo. MENZIES, gr. to R. CADBURY, Esq., Moseley. There were five exhibits. In most instances a too free use was made of Eulalias. The competition was keen. Mr. J. Maudrum, gr. to G. H. KENDRICK, Esq., Whetstone, was 2nd.

For a smaller group of Chrysanthemums and other plants, G. CADBURY, Esq., was a good 1st among five exhibitors.

Primulas and Cyclamens were shown well, but some of the Primulas were decidedly over-potted, being in 10-inch pots. The chief winners in these classes were Mr. CROOKS, Messrs. THOMSON & SON, and Messrs. POPE & SONS.

R. CADBURY, Esq., had the best table plants.

CUT BLOOMS.

In the important class for twenty-four incurved blooms, distinct varieties, there were eight competitors, Mr. Chas. CROOKS, gr. to the Dowager Lady HINDLEIGH, Hadsor, Droitwich, was placed 1st, staging a beautiful collection of fresh and large blooms. His varieties were Duchess of Fife, William Tunnington, Chas. H. Curtis, Madame Ferlat (very fine), Major Bonaffon, Empress of India, Miss Dorothy Foster, Topaz Orientale (a fine variety), J. Agate, Golden Empress, Queen of England, Robt. Petfield, John Lambert, Miss Foster, Lady Isabel (a grand bloom), Lord Alcester, Brookleigh Gem, Miss Eaggas, Mrs. Heale, Robt. Tomlin, Jeanne d'Arc, Mrs. S. Coleman, and Lucy Kendal; the 2nd position was occupied by Mr. J. H. Goodacre, gr. to the Earl of HARRINGTON, Elvaston Castle, Notts.

For twenty-four Japanese, distinct, S. LODGE, Esq., Floore House, Weedon (gr., Mr. Pearce), was a good 1st out of eight competitors. Mr. Pearce has taken 1st prize in this class for some years previous to last season, when he was beaten. This season Mr. Pearce was well 1st. Amongst his varieties the following were interesting:—Pride of Exmouth, Elthorne Beauty, Madame Gustave Hardy, Mr. J. Lewis, Robert Powell, Graphic, G. J. Warren, Duke of Wellington, Lady Hanham, Madame Carnot, M. Chenon de Leché, Lady Ridgway, Mrs. C. Blick, National Chrysanthemum Society's Jubilee, and Edith Tabor. Mr. C. J. Salter, gr. to T. B. HAYWOOD, Esq., Reigate, Surrey, was 2nd, having a very good collection of blooms. Mr. W. H. Lees, gr. to F. A. BEVAN, Esq., Trent Park, was 3rd.

For eighteen incurveds, Mr. CHAS. CROOKS was again 1st. There were seven exhibitors of collections of eighteen Japanese blooms, Mr. E. S. COPE, Redditch (gr., Mr. F. Seany), was the best. In this stand was a very fine bloom of Mons. Chenon de Leché, the best specimen of the variety in the show. The 2nd prize was taken by Mr. R. Jones, gr. to C. A. SMITH-RYLANDS, Esq., Warwick.

Mr. C. CROOKS had the best collection of twelve incurveds, distinct; and Mr. R. JONES was 2nd.

Mr. C. J. SALTER obtained 1st prize for twelve Japanese incurveds. One of his best blooms being a fine one of the variety *Australis*.

The best variety shown in sixes was Mrs. Philips Rivoire, from Mr. R. JONES.

The best yellow Japanese was *Phœbus*, from Mr. CROOKS.

In the class for twelve Anemone-like blooms, Mr. C. J. SALTER staged a very nice collection, his best blooms being *Delaware* and Mrs. Jules Benedict.

For twelve Japanese and twelve incurved blooms, Mr. A. Darley, gr. to H. W. ELLIOTT, Esq., Selly Oak, won with a very even lot of blooms of moderate size.

DECORATIVE CLASSES.

For a display of floral arrangements to occupy a space not exceeding 20 feet by 6 feet, Mr. CROOK, of Edgbaston, Birmingham, was a decided 1st. Many floral devices of *Chrysanthemums* were illustrated, and the best taste was evident. Messrs. POPE & SONS, King's Norton, Birmingham, secured 2nd place with a heavy, sombre-looking, but novel exhibit.

For twelve specimen *Chrysanthemum* blooms, arranged in a space 3 feet 6 by 3 feet, Mr. R. CABBURY was the winning exhibitor, there being four others. The blooms were interspersed with *Codiaeums*, &c.

FRUITS AND VEGETABLES.

For six bunches of Grapes, Mr. Geo. Mullins, gr. to Lady H. SOMERSET, Eastnor Castle, was 1st; Mr. J. H. GOODACRE, 2nd. Mr. Mullins' exhibit was very fine. There were numerous exhibits of Grapes, and the quality was unusually good. The chief prize-winners were Mr. BARNES, Mr. MULLINS, and Mr. GOODACRE.

There were classes for Apples and Pears. These were well filled, and the quality was generally satisfactory.

Vegetables were capital. For Messrs. WEBB's prizes the Earl of CARNARVON, Highclere Castle, Newbury (gr., Mr. Pope), was 1st. Mr. C. ALSTON was 1st for Messrs. POPE & SON's Collection; and Mr. CROOK for Messrs. SIMPSON & Co.'s Prizes.

NON-COMPETITIVE EXHIBITS.

An exhibit that attracted much attention was one from Her Majesty the QUEEN, Windsor (gr., Mr. Owen Thomas), who staged about 140 or 150 dishes, including Apples, Pears, Medlars, Plums, Quinces, Pines and Grapes; the stand was about 25 feet by 15 feet, and in the centre was a large vase, furnished with Palm-leaves, Bamboo-branches, *Asparagus deflexus*, *Berberis* berries, and *Chrysanthemum* blooms. There were also four corner vases. (A Gold Medal was awarded to this exhibit.)

Mr. A. F. WALTON was awarded a Gold Medal for a large representative collection of Cactus plants.

A large exhibit was made by the Right Hon. JOSEPH CHAMBERLAIN, M.P., consisting of stove and table-plants, Orchids, Primulas, *Begonia Gloire de Lorraine*, *Pelargoniums*, *Cyclamens*, *Chrysanthemums*, &c. (Gold Medal).

Messrs. SUTTON & SONS, Reading, were awarded a Gold Medal for a stand 100 feet in length, consisting of Potatoes, hardy plants, &c.

Messrs. JOHN LAING & SONS, Forest Hill, London, staged a collection of Apples and plants (Gold Medal).

Silver Medals were also awarded to several other firms for meritorious exhibits. H. K.

HANLEY CHRYSANTHEMUM.

NOVEMBER 9, 10.—The sixteenth annual exhibition was opened in the Victoria Hall on the above date. The society (which is affiliated with the National Chrysanthemum Society) has for patrons the Duke and Duchess of Sutherland, and for president the ex-Mayor (Mr. M. Tunnicliffe), with an influential list of vice-presidents, and an energetic committee.

The entries numbered 170, which is a slight increase on last year, and prizes to the value of £100 were offered. The cut-blooms were exceedingly fine; there was an increase in the number of the exhibits, but a falling-off in the number of grouped plants. The orchestra was decorated with a number of fine foliage plants from the Park, which had a very good effect.

Open Division.—Plants in Pots: Three Japanese, 1st, S. MONTFORD, Congleton. Group of *Chrysanthemums*, 1st, R. G. HOWSON, Shelton. Group of plants arranged for effect, 1st, R. G. HOWSON. Twelve table plants, 1st, J. C. WATERHOUSE, Presbury. Cut Flowers: Twenty-four cut blooms, incurved, eighteen varieties, 1st, the Earl of HARRINGTON, Derby. Twenty-four cut blooms, Japanese, eighteen varieties, 1st, R. W. D. HARLEY. Twelve cut blooms, incurved, distinct varieties, 1st, the Earl of HARRINGTON. Twelve cut blooms, Japanese, 1st, J. C. WATERHOUSE.

Open Amateur Division.—Plants in Pots: Six greenhouse plants or Ferns, 1st, E. DEAKIN. Cut Flowers: Twelve blooms, incurved, 1st, D. A. LEWIS. Six blooms, incurved, 1st, D. A. LEWIS. Twelve cut blooms, Japanese, six varieties, 1st, D. A. LEWIS. Six cut blooms, Japanese, distinct varieties, 1st, P. SIMPSON.

Amateur Division.—Cut Flowers: Twelve cut flowers, incurved, six distinct varieties, 1st, E. DEAKIN. Twelve cut flowers, Japanese, six distinct varieties, 1st, E. DEAKIN. Six cut flowers, Japanese, distinct varieties, 1st, E. DEAKIN.

Gentlemen's Gardeners' Division.—Twelve cut blooms, Japanese, six distinct varieties, 1st, A. S. DIX, Shelton. Six cut flowers, incurved, distinct varieties, 1st, JOHN MASKERY.

LIVERPOOL.

NOVEMBER 9, 10.—The annual autumn exhibition, held in St. George's Hall on the above dates, was, horticulturally, a successful one. Some alteration in the arrangement of the groups effected an improvement. The competition was scarcely so keen as in former years, still the show, as such, suffered but little. The most interest centred in cut blooms, for which a good money prize and a Challenge Cup were given for the best forty-eight distinct varieties. The competitors in this class numbered four, and as all the stands contained many fine examples, the result was good.

Mr. J. HEATON, gr. to R. P. HOUSTON, Esq., The Lawn, Aigburth, was a good 1st, having superior flowers of Japanese and incurved varieties, particularly *M. Chenon de Leché*, Lady Hanham, *E. Molyneux*, *Phœbus*, and *Australian Gold*; and incurved *Duchess of Fife*, Lord Alcester, Charles Curtis, and *Golden Queen of England*; Mr. G. BURDON, gr. to G. B. COCKBURN, Esq., Lingdale Lodge, Cloughton, was 2nd.

For eighteen incurveds there was a capital lot of entries, and fine blooms. Mr. J. DAVIES, gr. to — ELLIS, Esq., Dee View, Heswall, was 1st, having shapely blooms of popular varieties; Mr. C. OSBORNE, gr. to H. TATE, Esq., Allerton Beeches, was 2nd.

For the best twelve incurved varieties, Mr. W. DAWES, gr. to Lord TREVOR, Brynkenalt, Chirk, was 1st, with evenly-sized, not over-large blooms; Mr. E. BROADLEY, gr. to W. H. JONES, Esq., The Grange, Hooton, was 2nd.

The best eighteen Japanese varieties were those of Mr. C. OSBORNE, who easily took the 1st prize.

Mr. W. DAWES staged exquisite examples of Japanese varieties in the class for twelve blooms, and was an easy 1st, Mrs. Weeks, John Seward, Edith Tabor, and Charles Davis being especially fine; Mr. James Young, gr. to THE CHESHIRE LINE'S COMMITTEE, Otterspool, was 2nd.

Pompon varieties were grandly staged by Mr. E. Wharton, gr. to JOHN FINDLAY, Esq., Mavis Court, Sefton Park, in the class for twelve bunches, the blooms being perfect in form, of good size, and full, round, and suitably set up with their own foliage in bunches of three blooms.

The groups of *Chrysanthemums* mixed with foliage plants were, as previously stated, an excellent feature of the show. Mr. BRACEGIRDLE, gr. to W. H. WATTS, Esq., Elmtree Hall, Wavertree, was 1st, his plants carrying good blooms, evenly and lightly arranged in the group, and the *Crotons* that were used were very suitable for the purpose for relieving the blooms.

In the classes for eight trained specimens, there was an unfortunate falling off in quality, the only exhibit worthy of note being that for three Pompons. Here Mr. W. WILSON, gr. to H. CUNNINGHAM, Esq., Gorsey Cop, Gateacre, staged some abundantly-flowered plants.

Plants other than *Chrysanthemums*, are a feature at these shows, and some magnificent Palms and Ferns were exhibited whose handsome leaves and fronds could have been ill-spared in the decoration of the Hall. Mr. BRACEGIRDLE was adjudged 1st in each class.

Poinsettias were well exhibited by Mr. W. LYON, gr. to A. M. SMITH, Esq., Bolton Huy, Roby, the plants being from 2 to 3 feet high, with half a dozen heads of bracts each.

Orchids were noted in quantity. Mr. BRACEGIRDLE showing *Cattleya labiata* and *Cypripedium*. Messrs. J. COWAN & Co. staged an interesting lot of Orchids, Heaths, &c. Messrs. R. P. KIRK & SONS, Aigburth, a good exhibit of *Cyclamens*. Messrs. DICKSONS, Chester, Apples in variety.

NORTHAMPTON CHRYSANTHEMUM.

NOVEMBER 9, 10.—The twenty-seventh annual show was held on the above dates. The exhibits were of quite average quality, and some of the blooms shown by amateurs were very satisfactory.

GROUPS AND PLANTS.

For the best group of *Chrysanthemum* plants only, upon a space 8 feet by 7½ feet, there were only two competitors. The 1st prize was taken by Mr. ISAAC REEVE, gr. to Mrs. COULSON, Northampton, whose exhibit was of a very satisfactory character.

For a group of *Chrysanthemums*, 6 feet by 6 feet, Mr. W. KIRBY, Northampton, was 1st. This group contained some beautiful blooms, and was awarded a Silver Cup in addition to the 1st prize.

For six specimen plants of Japanese varieties Mr. ISAAC REEVE was again 1st.

Other autumn-flowering and ornamental foliage plants were well shown, and the chief prize-winners were Mr. SODEN, Mr. MANING, Mr. BARKAWAY, Mr. HEMMINGES, Mr. HINKLEY, Mr. AMOS SMITH, and Mr. BATEMAN.

CUT BLOOMS.

In the class for a table of *Chrysanthemum* blooms and Ferns and foliage plants, there were three competitors. Mr. Keightly, gr. to Sir HERWALD WEEKS, Courtenhall, was awarded 1st prize, for a superior exhibit; Mr. H. KEMPSTALL, gr. to Sir CHAS. E. ISHAM, Lamport Hall, was 2nd, with a pretty and effective arrangement of fine blooms. The best bouquet of *Chrysanthemums* was shown by Mr. BURROW, Northampton.

For eighteen Japanese blooms, distinct varieties, Mr. Wm. Pearce, gr. to Mr. S. LODER, Weedon, was 1st. Mr. Pearce staged some grand blooms, including *Elthorne Beauty*, *Pride of Exmouth*, *President Nonin*, Mrs. J. Lewis (very good), *Mons. Chenon de Leché*, Lady Ridgway, and Mrs. W. H. Weeks. Mr. COLES, gr. to Earl SPENCER, Althorpe, Northampton, occupied 2nd place.

For eighteen incurved blooms, distinct, Mr. PEARCE was again 1st, and included *Duchess of Fife*, C. H. Curtis (very good), *Ma Perfection*, Ernest Cannell, and Leonard Payne. Mr. COPSON took 2nd honours in this class.

For three Anemones and three reflexed blooms, Mr. Owen Soden, gr. to G. ADNITT, Esq., Northampton, was 1st; Descartes was very fine in this stand. Mr. COPSON was 2nd.

The best Japanese variety shown in sixes, was *Edith Tabor* from Mr. KEIGHTLY.

Mr. COPSON won an interesting class for six Japanese varieties introduced in 1897 and 1898, and showed Lady Hanham, Yellow Madame Carnot, *Beauté de Grenoble*, Robert Powell, Wertha, and Mrs. Maling Grant.

For the best twelve blooms of Japanese varieties introduced since 1894, Mr. S. COLE was 1st with *Mons. Chenon de Leché*, John Seward, *Mons. E. André*, Mrs. Mease, Robert Powell, N.C.S. Jubilee, Lady Ridgway, Mrs. J. Lewis, *Mons. Dieul Sillandria*, *Beauty of Teignmouth*, C. W. Richardson, and Eva Knowles.

The best incurved variety was C. H. Curtis, six nice blooms of which were shown by Mr. S. COLE.

FRUIT AND VEGETABLES.

Apples and Pears were shown well, and some good specimens were staged; the chief winners being Messrs. COLE, PEARCE, KEIGHTLY, ALEXANDER, and CORY. Mr. COLE was 1st for Black Grapes, and Mr. ALEXANDER for white Grapes. For eight varieties of vegetables Mr. KEIGHTLY was 1st, with a grand collection. Messrs. Sutton's prize for six varieties of vegetables was won by Mr. KEIGHTLY.

NON-COMPETITIVE.

There were several non-competitive exhibits. Messrs. THOS. PERKINS & SONS showed a large collection of fruit, plants, wreaths, and other floral devices. Mr. ARTHUR BAILEY and Mr. A. COCKERILL, The Drapery, Northampton, also showed floral devices, those from the last-named exhibitor being much admired for their superior quality. H. K.

MONMOUTH CHRYSANTHEMUM AND HORTICULTURAL.

NOVEMBER 9, 10.—This Society held its eighth annual show in the Rolls Hall, Monmouth, and it was the most successful exhibition the Society has yet held. The groups of *Chrysanthemums* were particularly meritorious, as were also the collections of Apples and vegetables.

There were five entries in the class for a group of *Chrysanthemums* in a space of 60 square feet, Mr. Phillips, gr. to J. M. BANNERMAN, Esq., Wyastone Leys, Monmouth, taking a good lead with plants having good foliage and very large flowers; Mr. PITT, nurseryman, Abergavenny, who followed, had likewise a good, although somewhat flatly-arranged group.

A. VIZARD, Esq., The Ancre Hill, Monmouth, was the only exhibitor of a smaller group.

Cut Blooms.—Twenty-four incurved blooms from Mr. PITT were the best—moderately large flowers, the best being C. H. Curtis, *Ma Perfection*, Lord Wolseley, and *Princess of Wales*.

Mr. PHILLIPS won for twelve incurveds, and had large, well-finished blooms of *Madame Darier*, C. H. Curtis, *Madame Ferlat*, *Globe d'Or*, Baron Hirsch, Mrs. Kingston, &c.; Mr. Lockyer, gr. to J. HANBURY LEE, Esq., Pontypool Park, closely followed.

In the class for twenty-four Japanese blooms, Mr. PITT was 1st with some grand blooms of G. J. Warren, *Duchess of York*, *Madame Carnot*, Mrs. J. Lewis, *E. Molyneux*, N. C. S.'s Jubilee, &c.; 2nd, Mr. Davis, gr. to W. G. WRIGHT, Esq., Quarry House, Hereford, who had larger flowers than those in the 1st prize stand, but not so uniformly well finished, or as well put up.

Mr. Spencer, gr. to C. H. MOFFATT, Esq., Goodrich Court, Ross, had the best collection of twelve Japanese blooms; and was followed by Captain HOPOOD.

Mr. JONES, Ryecroft Nursery, Lewisham, offered a Silver-gilt Medal for the best six Japanese blooms, which was won by Mr. SPENCER.

Fruit.—Mr. PITT had the best collection of six dishes of Pears; and Mr. SPENCER was 1st for a collection of six dishes of dessert Apples. Six dishes of culinary Apples were best shown by Mr. DAVIS.

The best three bunches of black Grapes were from Mr. LOCKYER, who had Black Alicante; and the best three bunches of white Grapes were Muscat of Alexandria, from the same exhibitor.

NON-COMPETITIVE EXHIBITS.

A fine collection (fifty dishes) of Apples and Pears, with a background of ornamental foliage-plants, was exhibited by Mr. COOMBER, gr. to Lord LLANGATTOCK, The Hendre, Monmouth. L. C.

LAUNCESTON CHRYSANTHEMUM AND FRUIT.

NOVEMBER 10.—The third annual exhibition, which was held in the Town Hall, Launceston, on the above date, was generally considered to be a great advance upon those that have been held by the Society.

The groups were good, the plants in almost every instance well bloomed; foliage generally free from rust, and the arrangement of the plants left little to be desired. For a

group arranged in a space not exceeding 80 square feet, Mr. J. Reuse, gr. to Miss GURNEY, was 1st, taking also the National Chrysanthemum Society's Certificate. This was a pretty group of plants, averaging 4 feet in height, with numerous fresh blooms of large size. Mr. J. Livermore, gr. to J. S. TREGONING, Esq., was 2nd; here the plants were taller, the flowers much smaller—still, it was a pleasing group.

For a group in a space of 60 square feet, Mr. Woodley, gr. to Miss MILNES, was 1st, with a capital arrangement, in which Ferns, grasses, and foliage plants were well employed; Mr. LIVERMORE was again 2nd.

For nine plants, with an average of six blooms on a plant, W. WEVILL, Esq., was awarded 1st, his plants being dwarf and the blooms good; Mr. J. Parsons, gr. to E. PETHYBRIDGE, Esq., had also good plants, but smaller blooms.

For a group of plants, of not fewer than twelve nor more than eighteen, the position of these last two competitors was reversed, Mr. PETHYBRIDGE's plants being full of flower.

CUT BLOOMS.

For twenty-four blooms (Japanese), in eighteen distinct varieties, G. L. ELLIS, Esq., was awarded 1st prize, with a very even lot of good blooms, and several newer ones among them; Mr. LIVERMORE was a close 2nd.

For twelve blooms (Japanese, distinct), The Ven. Arch. DU BOULAY came well to the front. Some capital stands of incurved blooms were shown by W. WEVILL, Esq., 1st for twelve; and 1st for twelve Japanese.

In the amateurs' class for twelve Japanese, G. L. ELLIS, Esq., was 1st, with a very even lot of blooms. This was a well-contested class. *A Correspondent.*

WINDSOR CHRYSANTHEMUM.

NOVEMBER 10.—A really good show was held in the Albert Institute, Windsor, on the above date. The competition was keen throughout, and the exhibits were good. Groups of Chrysanthemum plants were the feature of the show. Six exhibitors entered in the open class for the possession of the Challenge Cup, which is awarded with the 1st prize. Mr. W. Cole, gr. to Mrs. E. B. FOSTER, secured the Award with a commendable group; Mr. W. Davis, gr. to H. ADAMS, Esq., was 2nd. Mr. H. EDWARDS, 32, Albert Street, Clewer, Windsor, won a similar honour in the amateurs' division.

Mr. Fifield, gr. to T. CAWTE, Esq., staged the best specimen-plants, and these showed high cultural skill. A plant of the variety Mrs. G. Rundle was furnished with over 100 good blooms.

In the cut-bloom section, Mr. Sturt, gr. to L. COHEN, Esq., Engleford Green, won the 1st prize for twenty-four Japanese varieties; and Mr. Lane, gr. to Miss RIDGE, Ascot, was 2nd. Mr. Lane won for twenty-four incurveds and the Challenge Cup for twelve Japanese, and a like number of incurved varieties; also for six Japanese blooms of one variety.

Mr. J. Wood, gr. to Lord BOSTON, won for twelve Japanese blooms, showing large and fresh specimens; also for six incurved flowers of one variety, this being C. H. Curtis.

Mr. W. COLE staged the best Anemone blooms, and won premier position.

Baskets of Chrysanthemums and foliage of any kind, made, as they always do here, a grand display. Mr. LANE, with excellent examples of Japanese varieties, associated with suitable autumnal foliage, won the coveted Award. Mrs. BARGRAVE WYBORN secured a like Award in the class open to ladies only.

Fruit and vegetables were numerous and good.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 10.—The last meeting of this society took place at the Coal Exchange, Manchester. Present: Messrs. G. Shorland Ball (in the chair), Law-Schofield, Greenwood, Leemann, Gratrix, Weathers, Johnson, and Mills (hon. sec.).

The following is the list of the First-class Certificates and Awards of Merit given at the meeting:—

SAML. GRATRICK, Esq., Whalley Range (gr., Mr. McLeod), showed *Cypripedium insigne Ernesti* (First-class Certificate); *Cypripedium Grovesianum* (Lathamianum × *Leeanum*) (Award of Merit); *C. Ashburtoniae giganteum* (Award of Merit); *C. Leeanum aureum* and *Laelio-Cattleya Amelia* (amethystina × cinnabarina) (Award of Merit).

THOMAS STATTER, Esq., Whitefield (gr., Mr. Johnson), showed *Dendrobium bigibbum*—Stand Hall variety (First-class Certificate); *D. Phalaenopsis Schroderianum* (Cultural Certificate); *Laelio-Cattleya Statterianum* (Laelio-Perrini × *C. labiata*) (Award of Merit); *L.-C. Ascania*, *Cypripedium insigne Johnsoni* (Award of Merit), and *C. insigne superba*. The same exhibitor also staged a very fine group, for which a Silver-gilt Medal was unanimously awarded.

Messrs. CHARLESWORTH & Co., Bradford, showed *Cypripedium Jeanette* (niveum × *Leeanum*) (Award of Merit); *C. Lilian*, and *C. callosa*—Warneri.

Mr. JOHN ROBSON, Altrincham, showed *Cattleya labiata*, *Odontoglossum crispum*, *Cypripedium Charlesworthi*, and *C. Leeanum giganteum*. A group was also staged by this exhibitor, which received a Vote of Thanks.

FRED HARDY, Esq., Ashton-on-Mersey (gr., Mr. Stafford), exhibited a small group, in which was included *Cattleya Hardyana* and *Laelia praestans alba* (a Vote of Thanks was awarded). *Communicated.*

HARROGATE CHRYSANTHEMUM.

NOVEMBER 10, 11.—The fourth annual show of this Society was held on the above dates, and was attended with increased success. The entries in all classes were good, and the exhibits were far above the average quality.

Groups.—In the class for a group of Chrysanthemum plants only, Mr. J. PETTINGER was 1st, and E. B. FABER, Esq. (gr., Mr. W. Townsend), 2nd, who, having entered in most of the group classes, was in this case beaten.

In the open class for a group of miscellaneous plants, including Chrysanthemums and Orchids, E. B. FABER, Esq., was easily 1st, and the arrangement was most effectual. In the foreground of the group was arranged a beautiful group of Orchids, including some charming sprays of *Oncidium Rogersii*, and many other Orchids. 2nd, The QUEEN HOTEL Co., Harrogate.

Cut Blooms.—For twenty-four Japanese varieties, A. WILSON, Esq., Tranby Croft (gr., Mr. Leadbetter), was 1st; he staged some good, well-finished blooms, among others, Emily Silsbury, Graphic, Edith Tabor, Lady Ridgway, International, and Eva Knowles.

For twenty-four incurveds, A. WILSON, Esq., was 1st, who staged Princess of Wales, Lucy Rendell, Ma Perfection, Golden Empress, Madame Forlat, C. H. Curtis, &c.; 2nd, C. H. SIMPSON, Esq. (gr., Mr. Retchell).

Fruit was well shown, an especially fine collection of Apples and Pears being staged. For a collection of six varieties of fruits, A. BROTHERTON, Esq., Arthington Hall, was 1st, his collection including some fine Muscat Grapes.

The best six dishes of baking Apples were from Lady COWELL, Clifton Castle (gr., Mr. Lee).

Florists Exhibits.—Some very charming bouquets and other devices were shown. In the class for one hand-bouquet, the competition was keen. 1st prize, W. BONNALL, Harrogate; 2nd, A. J. HALL, Harrogate. All were excellent, and greatly admired.

Messrs. BATCHELOR, BONNALL, and HALL each staged a display of floral devices, not for competition, and these were a great centre of attraction during the show.

The Harrogate Committee are especially fortunate in having such an excellent hall for their show, it being held for the second time in the Winter Garden recently erected in connection with the baths; and when lit up by the electric light in the evening, and viewed from the staircase at the entrance, the hall presented a charming effect.

BECCLES CHRYSANTHEMUM AND HORTICULTURAL.

NOVEMBER 10, 11.—The ninth annual show of this Society was held in the Town Hall, Beccles, on the above dates. The show, on the whole, was equal in quality to those of former years, and the competition was keen.

For Chrysanthemums in pots, E. MASTERS, Esq., Beccles, again carried off chief honours for Japanese, incurved, reflexed, and Pompon varieties; also the 1st prize for a single specimen, which was a fine plant of Viviani Morel. The 2nd prizes in the above classes were awarded to Miss CROWFOOT and A. WOODS, Esq.

Cut blooms were well shown. For twenty-four Japanese varieties, open class, the Misses FOWLES, Beccles, were 1st prize winners, and in this stand was the best bloom in the show, being one of Phœbus; the 2nd prize went to N. BACON, Esq., Raveningham Hall.

E. MASTERS, Esq., was 1st for twelve Japanese varieties with very fine blooms. Incurved varieties were also well represented.

For the best miscellaneous group of plants, A. WOODS, Esq., was most successful. There was the usual display of hand-bouquets and epergnes.

Good collections of fruit came from Sir R. BEAUCHAMP, 1st prize, and N. BACON, Esq., 2nd. A very meritorious honorary collection of garden produce was exhibited by Mr. BATTERS, Gillingham Hall Gardens. *H. F.*

LEICESTER CHRYSANTHEMUM.

NOVEMBER 11, 12.—A most successful exhibition in connection with this Society was held on the above dates. There were 245 entries, and upwards of 1000 cut blooms were staged.

For eighteen incurveds, the Rev. M. BIRD was placed 1st; and Mr. J. SMITH 2nd. In the class for eighteen Japanese blooms, the positions of the same exhibitors were reversed. The Rev. M. BIRD led the way again for twelve incurveds, distinct; Mr. SHARPE, Little Dalby Hall Gardens, Melton Mowbray, being 2nd in this class. Mr. SMITH was the best exhibitor of twelve Japanese blooms, and the Rev. M. BIRD followed.

For six blooms of any variety, to be shown with foliage as grown, and with stems not less than 12 inches in length, no cups and rings being allowed, Mr. A. BELL was most successful, as he was also for three bunches of Chrysanthemums.

Table decoration was very prettily done. No flowers but Chrysanthemums were allowed, but any kind of foliage was permissible. Mr. CORNELL was placed 1st, and the Rev. M. BIRD 2nd. The amateur class for cut blooms was well contested.

There was a good display of choice fruits. The duties of the secretaryship were capably discharged by Mr. ROBERT G. LAWSON. *H. K.*

HAYES CHRYSANTHEMUM.

NOVEMBER 11.—A very successful exhibition was held in the Hayes Schools on the above date, groups of Chrysanthemums and cut flowers being alike good and of high quality.

The best group, which was composed of well-grown plants carrying fine blooms, came from Mr. Fulford, gr. to the Rev. J. GIDDING, Hayes. Mr. FULFORD was also 1st for a group of Pompons with a very pretty arrangement.

With a stand of twelve Japanese, distinct, Mr. Stenestreet, gr. to E. BRADLEY HUNT, Esq., was 1st, just beating Mr. FULFORD. The latter exhibitor was 1st for a fine and heavy stand of incurved blooms, a flower of C. H. Curtis being selected as the best incurved flower in the show. For a stand of Japanese incurved varieties Mr. FULFORD was again 1st, and from this exhibit was chosen the premier Japanese bloom, a very fine specimen of Modestum. For twelve Anemones, large-flowered, the last-mentioned exhibitor was 1st, with very fine blooms, including Descartes, John Bunyan, W. W. Astor, and Ernest Caille. Pompons were also well staged.

ULSTER HORTICULTURAL.

NOVEMBER 15, 16.—The tenth annual exhibition of the Ulster Horticultural Society was held in St. George's Market, Belfast. The show was opened by the Countess of Annesley; and the Lord Mayor of Belfast, Lord Londonderry, and other distinguished supporters of horticulture were present. The exhibition was worthy of the Society, in regard to the quality and quantity of the exhibits. The groups of foliage and flowering plants were very pleasing.

Considerable interest was manifest in a decorative table of fruit sent by Her Majesty The QUEEN, from the Royal Gardens, Windsor, to which a Gold Medal was awarded. This exhibit included Grapes from the old Vines at Cumberland Lodge and Hampton Court. Large vases of Chrysanthemums were placed in the centre of the table, and around the sides were small vases of Orchid blossoms. The exhibit was covered with a canopy in blue and gold.

Mr. HUGH DICKSON, of the Royal Nurseries, Belfast, showed a fine stand of baskets and dishes of splendidly-coloured Apples.

Messrs. ALEX. DICKSON & Sons, Newtownards, had a table of Apples and Pears, also a large show of farm produce.

Messrs. S. MCGREDY & Son, Portadown, exhibited baskets of Apples and Pears.

Quite a novel feature was the striking miniature Jardin d'hiver, designed and setup by Mr. C. MCKINNON, Curator of the Botanic Gardens, Belfast. Large Palms, Camellias, Ferns, &c., screened the walls of the building, and Cycads, Anthuriums, Aralias, and Ferns were among the plants used to form the various groups. A cascade and small lake with mossed bank much enhanced the beauty of the exhibit.

PLANTS.

In the class for a group of Chrysanthemums 12 feet by 16 feet, WM. ROBERTSON, Esq., J.P. (gr., Mr. P. McHattie), Netherleigh, Belfast, took 1st honours, with fine plants of V. Morel, Modestum, C. Davis, Val d'Andorre, each carrying from twelve to twenty blooms; the 2nd prize went to ROBERT TENNENT, Esq. (gr., Mr. J. McIlveen), Rushpark, Whitehouse.

For the best specimen Chrysanthemum plant (incurved), Mr. TENNENT was 1st, with a good plant of Baron Hirsch.

For the best Japanese specimen plant, Mr. ROBERTSON took 1st place, his variety being Colonel Smith.

J. YOUNG, Esq. (gr., Mr. T. Foster), Abbotscroft, White-abbey, was 1st for a collection of stove and greenhouse plants, which included good *Codiaeums*, *Begonias*, *Cordylines*, *Ferns*, &c., edged with *Strobilanthes Dyerianus*, and *Isolepis gracilis*; Wm. GREER, Esq., Danesfoot, Belfast, was 2nd. Some good specimen plants of *Primula sinensis*, *P. obconica*, also *Codiaeums*, were noticeable in this section.

In the nurserymen's class for a group of stove plants, Mr. HUGH DICKSON, of the Royal Nurseries, easily secured 1st place. This group was very tastefully arranged, and specially good were the specimens of *Heliconia striatum aureum*, *Dracena Burtoni*, *D. amabilis*, and *Acalypha macrophylla*. Mr. MAGEE, Knock Nursery, Strandtown, was 2nd.

Mr. HUGH DICKSON was the only competitor in the class for a group of Conifers and ornamental hardy plants.

CUT FLOWERS.

The cut blooms of Chrysanthemums, on the whole, were of good and even quality. The class for forty-eight Japanese blooms, in which six high money prizes were offered, was keenly contested, the 1st prize going to Lord ASHBROOK (gr., J. McKellar), The Castle, Durrow, who had extra good blooms of Graphic, Australia, and Madame Carnot. A. STIRLING, Esq. (gr., Mr. T. Lunt), Keir Gardens, Dunblane, Perthshire, was a close 2nd. The 3rd prize fell to Viscountess HAMBLETON (gr., Mr. Perkins), Greenlands, Henley-on-Thames. A grand bloom of Phœbus in this collection obtained the Rycroft Medal, given by Mr. H. J. Jones, for the best Japanese bloom in the show. Lord ASHBROOK was again successful in gaining 1st prize in the class for twenty-four incurved blooms. C. H. Curtis in this collection gained the Rycroft Medal as being the best incurved bloom.

FRUIT.

Apples and Pears were well shown, and the competition in the classes was keen. Lieut.-General PAKENHAM (gr., J. Harding), Langford Lodge, Crumlin, secured 1st prize for a collection of eight dishes of fruit. The Marquis of DOWN-

SHIRE (gr., T. Bradshaw), Hillsboro' Castle, Hillsboro, was placed 2nd. Grapes were of average quality, Lt.-Gen. PAKENHAM and Lady HOWARD-BURY being the chief prize-winners.

Lt.-Gen. PAKENHAM secured premier honours, and a Challenge Cup, for twenty-four dishes of Apples, distinct, Lord Derby, Warner's King, and Bramley's Seedling, were excellent; Lady HOWARD-BURY, was 2nd.

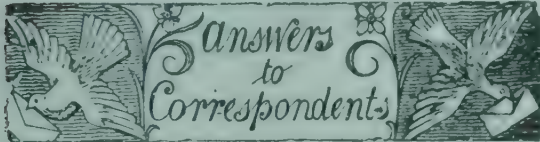
Lt.-Gen. PAKENHAM again took 1st prize for six dishes of Pears, distinct, Pitmaston Duchess and Beurré Clairgeau were the best; Lord DERAMORE (gr., Mr. W. McLaren), Belvoir Park, Belfast, was 2nd.

THE VEGETABLES

were represented by good clean specimens, especially good were Leeks, Celery, and Parsley. Lord CAREW (gr., Mr. J. McLennan), Castle Broo, Enniscorthy, took 1st prize for a collection of twelve dishes.

Farm produce in variety, Mangolds, Swedes, and Winter Cabbages, &c., were well shown.

THE SCOTTISH HORTICULTURAL ASSOCIATION held the best autumn exhibition they have ever had in the Waverley Market, November 17. Cut blooms were the feature of the show. For twenty vases of Chrysanthemums, distinct, three blooms each, Mr. T. LUNT, Keir, Dunblane, was easily 1st, with grand blooms; Mr. D. NICOLL, Rossie, 2nd; Mr. A. HAGGART, Moor Park, Ludlow, 3rd. For thirty-six blooms, distinct, Mr. T. LUNT was again successful with good blooms. A more detailed report will be given in our next issue.



BEATING FRUIT OFF THE WALNUT: *Constant Reader.*

It is supposed that thrashing the branches has the effect of increasing fruitfulness, the branches, by this rough kind of pruning, forming a larger number of fruiting-spurs than would otherwise be formed. It is an old practice, and there may be something to be said for the underlying idea. At any rate, thrashed trees bear well, so that if no good be done, neither is there any appreciable harm; we cannot, however, recommend the practice.

BEECH COCCUS: *W. B.* Yes. See letters in this week's issue.

BOOKS: *W. L. H.* *Fruit-farming for Profit*, by G. Bunyard; published by Frederick Bunyard, 29, Wick Street, Maidstone. *Farming for Pleasure and Profit, and Market Garden Husbandry*, by W. H. Ablett; published by Chapman & Hall, 11, Henrietta Street, Covent Garden, W.C.—*T. H. H.* For Ferns, get B. S. Williams & Son's *Select Ferns and Lycopods*; and for herbaceous plants, *Hardy Herbaceous and Alpine Flowers*, by W. Sutherland; published by W. Blackwood & Co., St. Martin's Street, London, W.C.

CALANTHES DECAYING: *G. S.* We can detect no cause for the decay of the roots of the Calanthes in the pseudo-bulbs sent. It is highly probable that the defect in the water mentioned by you caused the damage. Also, if the water is applied too warm it is detrimental. We would advise the removal of the tank from off the hot-water pipes, and having it thoroughly cleansed, and placed in a cooler part of the house.

CARNATIONS: *G. P., J. F.* Your leaves are affected by a brown mould, called *Helminthosporium echinulatum*. See Worthington Smith, in the *Gardeners' Chronicle*, August 21, 1886, with figure. Burn the affected plant. Sponge the leaves frequently with Gishurst Compound, which has been found useful.

CHRISTMAS SALAD: *Constant Reader.* We are unacquainted with a plant having this name, and cannot, therefore, advise you. Kindly send an entire plant for our inspection.

CHRYSANTHEMUM LEAVES: *W. L. H.* No "rust."

CŒLOGYNE SANDERIANA: *Subscriber.* You had better suspend the plant in the warm-house near the glass of the roof, and keep it supplied with water freely until growth is finished. Afterwards afford water less frequently until the flowering-time arrives.

CORRECTION: On p. 244, Apple named Enderleaf should be Onderleaf. The fruits of this variety are retained for the present. — *Botanical Magazine*, p. 352, Calliandra; for Composite, read Leguminosae.

CYPRIPEDIUM: *T. F.* Probably the plants have had too much heat at times; and probably moisture has condensed and settled on them at night; or impure air may have gained access to the house.

DENDROBIUM CLAVATUM: *Subscriber.* Give the plant a rest in a cool, dry house, affording the plant water only at long intervals, until it begins to grow again, or show flowers.

"I" or "II"; "ANA": *Anglo-Scot.* In theory, the Latin usage ought to be followed; for an explanation of this, you should refer to your Latin grammar. In practice, it is indifferent which you use, and writers are influenced by euphony, if at all. As a general rule, subject to very numerous exceptions, you will find nouns that end in a hard consonant are spelt with a single "i," nouns ending in "ius" are correctly spelt "ii" in the genitive. When the name is merely complimentary, "ana" should be used as the termination; "i" or "ii" are used—or should be used—to denote that the person named has had something to do with the plant in question—he may have discovered, or described, or figured it, or raised it; but the rule, like the preceding, is nearly as much honoured in the breach as in the observance.

INSECTS: *H. H. & Co., Gravesend.* It would be safer to pursue both of the courses you suggest, viz., to fumigate with the compound you name, and also to wash with weak insecticide.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—*Geo. Wall.* The fruits resemble "Tyler's Kernel."

—*Y. M. G.* 1, Mère de Ménage; 2, Royal Russet; 3, Alfriston; 4, Braddick's Nonpareil; 5, King of the Pippins; 6, Old Nonpareil.—*W. Hurst.* 1, Warner's King; 3, Tower of Glamis; 4, Alfriston; 2, 5 and 6, not known.—*Tees.* 1, Striped Holland Pippin; 2, Beauty of Kent; 3, Pearson's Plate; 4, Lewis' Incomparable; 5, Hollandbury; 6, Non-such.—*J. C. M.* One Apple, Curlytail.—*Hortus.* Grapes, 1, Mrs. Pince's Black Muscat; 2, Alicante. Apple, Beauchampwell; Pear not recognised, bruised.—*Northleigh.* 1, Peasgood's Nonsuch; 2, New Hawthornden.—*G. S. B.* 1, Keswick Codlin; 2, Roundwinter Nonsuch; 3, Cox's Orange; 4, Ecklinville Seedling; 5, Hanwell Souring; 6, Mère de Ménage.—*R. C. W.* 1, American Mother; 2, Queen Caroline; 3, Golden Reinette; 4, Rymer; 5, Waltham Abbey Seedling; 6, Lewis' Incomparable.—*H. Fleet.* 1, Manx's Codlin; 2, Lord Grosvenor; 3, 5, 6, Cox's Orange Pippin; 4, Striped Breeing.—*A. J. G.* Pears, 1, Marie Louise d'Uccle; 2, Doyenné du Comice; 3, Duchesse d'Angoulême. Apples, 4, Lord Grosvenor; 5, Alfriston; 6, Blenheim Orange.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*A. B. S.*, Joppa. The Agarics were in such a condition that it was impossible to identify them. Possibly the yellow ones might have been some species of *Hygrophorus*. *M. C. C.*—*Standcliffe Estates Co.* *Crataegus Aronia*, native of Greece.—*H. H. & Co.* The Fern appears to be a form of *Pteris cretica*, but it is impossible to say from the dry barren frond sent. Send fresh fertile frond.—*E. W.* *Sarcanthus teretifolius*.—*J. T. B. P.* *Catasetum macrocarpum*.—*J. T. H.* We do not undertake to name florist's flowers, but your *Chrysanthemum* appears to be the old *Anemone* flowered *Fleur de Marie*.—*R. H. P.* *Eragrostis purgens*.

OLEARIA DYING: *M. & Son.* We see no insect or fungus. The plant has been pot-bound, and the appearances suggest bad drainage, or something amiss in the soil.

PEARS: *T. Basket.* The fruits are spoiled by cracking; see fig. 103 in *Gardeners' Chronicle* for Nov. 5.

PHYSIANTHUS ALBENS: *D. C.* The fruiting of this plant is not very uncommon. A figure of it, under the name of *Arauja sericifera* was given in the second volume for 1898, p. 436.

RINGING THE BRANCHES OF FRUIT TREES: *W. L. H.* The operation may be performed late in the spring, and likewise during growth if it be seen that

certain branches or shoots are taking the lead unduly. The operation affects more immediately the growth of the wood above the ring.

ROMAN HYACINTHS: *Albany.* They should be removed from the boxes in which they have been started, when relatively few roots exist on them, the operations of lifting and potting being very carefully carried out, so as not to bruise or break the roots. The soil, of a rich, light, rather sandy nature, should be passed through a $\frac{1}{4}$ -inch-meshed sieve, would then fall in between the roots, with but little pressure by hand.

ROSE-SEEDS: *J. P.* Let the haws be "stratified" in sand or sandy soil in the open air, the layers of haws being 1 inch, and the sand 2 inches thick. To prevent disturbance from any cause, the whole should be put together in a pit of suitable dimensions. If only a few haws are to be manipulated, the seeds may be rubbed out in dry sand. Sow in lines, or beds broadcast in the spring. All will not germinate the first year.

ROYAL HORTICULTURAL SOCIETY'S EXAMINATION: *A Young Gardener.* Apply to the secretary of the Society, 117, Victoria Street, Westminster.

SCHEDULE READING: *H. K.* A schedule should be read in its literal sense. In the case in point, the plants shown were required to be of distinct "species." This word should be interpreted in its botanical sense, and two specimens of *Cordylone* or *Palm* would be permissible, providing they represented distinct "species," and were not merely varieties.

SUPERPHOSPHATE OF LIME FROM BONES: *W. L. H.* Excellent as top-dressing for Apples, Pears, Quinces, Fig, Vines, in moderate amount, say $\frac{1}{2}$ lb. per square yard; applied as a dressing twice during the season, once just before growth commences, and again in June or July, it will do good. This manure is made commercially by treating the bones with sulphuric acid (white vitriol), which converts the insoluble calcium into soluble form, so that growing plants may make use of the phosphoric acid at once. The bones are first crushed or ground, and then treated with the acid. The process offers no advantages except in rapidity of making over the use of caustic alkalies, as lime and potash, the process being hastened by the use of strong stable-manure. The way to make it is to spread on a hard bottom in a pit, a layer of bones 3 to 4 inches thick, covering this with wood-ashes, or with lime, following this with a 3-inch layer of horse-dung, then another layer of bones, one of wood-ashes, or lime, and one of horse-dung, and so on to a convenient height. When the heap is finished, bore a number of holes in it, and pour in water to slake the lime and set up a strong fermentation which may last two months. When the fermentation has ceased, the bones will be found very brittle and easily pounded up fit for use. The whole should then be screened and the finer portion of it stored in a dry place.

COMMUNICATIONS RECEIVED.—F. N.—H. E., Rome.—O. F., Austria (next week).—J. R., Menabilly.—G. B.—W. B.—C. H. T.—H. C. H., Carrablaich.—W. D.—J. W. C.—M. D.—Jas. Robertson.—E. J. L.—C. G. Smith (next week).—Bradford and District Chrysanthemum Society.—Cherry.—J. F.—J. F. H.—D. T. F.—W. J. G.—E. J. L.—W. B.—Mrs. J. M.—E. H.—Programme.—W. M.—J. O'B.—C. S., Paris.—J. M. H.—W. R., Stockport.—De B. Crawshaw.—C. G. S.—E. M.—D. C.—A. P.—W. W.—J. Bunting.—T. H. S.—W. J. B.

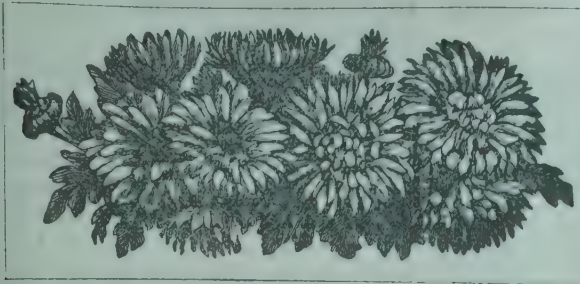
PHOTOGRAPHS, SPECIMENS, &C., RECEIVED WITH THANKS.—F. N., Batheaston.—J. W. C.—F. W.—E. M.—W. W.—Prof. F.—F. W. B.—L. C.—W. D.—R. McL.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED,

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a special large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see p. x.)



THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 26, 1898.

ORCHARDS IN GRASS.

A LARGE proportion of the acreage devoted to hardy fruit-culture in this country is occupied with orchard trees planted in grass, which is either cut for hay, or, more commonly, employed as pasture for sheep and other stock. That the influence of this custom has produced injurious results in numbers of places can be easily demonstrated; in fact, few districts in the southern or western counties can be visited without the combined evils of grass and neglect being deplorably apparent. The marked difference in the condition of some orchards that may be observed in the immediate neighbourhood of the neglected ones, is not invariably or entirely due to better cultivation, more suitable soil, or stronger varieties; there is another influence at work which demands more consideration than it has hitherto received, namely, the varying effects of the different grasses constituting the pasture around the tree stems.

In the course of the highly interesting and important experiments conducted at Rothamsted for some years, and reported on by Sir John Lawes, Sir Henry Gilbert, and Dr. M. T. Masters, conclusive evidence was adduced that the grasses usually employed in the formation of permanent pasture varied surprisingly, not only in their power of contending with their congeners for predominance, but also in their food requirements, and consequently in their exhaustive influence on the land.

Without attempting to go into the elaborate details of the report published in the *Philosophical Transactions of the Royal Society* (1880), a few examples drawn from the conclusions will suffice for the purpose of these notes. The sweet vernal grass, *Anthoxanthum odoratum*, has superficial roots, and in a mixture of other grasses appeared to succeed best with but little manure, yet alone it was benefited both by sulphate of ammonia and nitrate of soda. *Alopecurus pratensis*, which is deep-rooting, however, yielded the heaviest returns with liberal nitrogenous manuring, and was equally satisfactory whether that was supplied as ammonia or nitrate. *Dactylis glomerata*, which is also deep rooting, gave the best results with ammonia, and fell away when treated with nitrate. On the other hand, *Poa trivialis*, which roots freely, but near the surface, gave opposite results—namely, it was much more favourably affected by the nitrate than by the ammonia; and it is remarkable that the nearly-related *Poa pratensis* showed a notable preference for ammonia salts, and declined under the influence of nitrate. Similar varying results were obtained with other grasses, proving that the application of certain manures to mixed herbage causes the encouragement of some

species, and gradually leads to the extinction of others. Obviously, also, they exhaust the surface-soil in differing degrees, and therefore vary in the effects produced upon the roots of trees with which they may be competing for support.

Apart from their varying chemical requirements, the grasses also differ considerably in their exhausting power as regards moisture. Evidently the broad and abundant leaves of the Cocksfoot expose an enormously greater evaporating surface than the foliage of the finer Fescues or Poas. This has a double effect, first, in a dry season the surface-roots of trees are deprived of the needful supplies of moisture; and secondly, in a wet time, or in a district where the rainfall is heavy, the constant evaporation from a dense under-growth favours the production and increase of Cryptogamic vegetation which so densely clothes the stems and branches of orchard trees in many counties.

In several instances that have come under my observation, or within my experience, I have repeatedly noticed that there is a correspondence between the composition of the grasses and the condition of the trees, thus where *Dactylis glomerata* or *Holcus lanatus* with other broad-leaved strong species were most abundant, there the trees were undoubtedly in the worst state as regards stunted growth, poor foliage, and bark infestation. Where the pasture has been formed of the finer grasses with a good proportion of Clovers or other Leguminous plants, or where the ground had simply become self-sown chiefly with the *Poa annua*, very little or no injury was apparent.

It is possible, even in the latter case, that some benefit may arise from having orchard trees in grass when they have once become thoroughly established. In the early stages the presence of grass operates as a great check to the roots of the fruit-trees, and especially is this so with Apples on the surface-rooting paradise stocks, but it is seldom that dwarf trees are required in pasture because the cost of adequately protecting them from sheep or other animals would be prohibitive. Standards, as the Crab-stock, are also influenced unfavourably in their early stages, though with very vigorous growers which are a long time arriving at a fruitful state, a moderate check has a tendency to prevent excessive growth, and to promote earlier fertility. Pears are very similarly affected, but Plums and Cherries probably succeed best of all in turf, provided they are not allowed to be stunted by strong grasses immediately after planting. It is the general opinion and experience in some of the largest Plum-growing districts, that cleaner, brighter, better flavoured, and more saleable fruits are obtained from Plums in grass, than from those in cultivated land. The pasture should, even for these fruits, be formed of the best grasses, be well tended, and either grazed or cut close and frequently, and adequate manurial dressings applied if the grass be carried off the ground.

It is at the time of planting that care must be taken if permanent pasture is chosen for the orchard, and spaces 4 feet in diameter, cleared of turf and well dug, will usually suffice for the strongest standard Apples, and less will be required by smaller-growing varieties. The space must be kept clear for at least three years from the time of planting, the surface being frequently stirred in dry weather. I have found this enable the trees to become so well established that, with due attention to the matters already pointed out, the after-progress has been quite satisfactory, even with the grass

growing over the roots. It is occasionally advocated that the whole of the soil should be cultivated for several years, and then laid down to grass; but unless a regular plantation is formed with dwarf trees and bushes, or with vegetable crops between, it is not a desirable way of forming an ordinary paddock-orchard, because it is more difficult to obtain a really good pasture then. Where grass-land is scarcely sufficiently abundant for the tenant's requirements, these paddocks are found very useful; it is also a method of fruit planting which does not necessitate a large outlay at starting, or for subsequent cultivation. If, however, fruit culture is to be carried out on an extensive scale for profit, the mixed plantations and cultivated land will give far larger proportionate returns for the capital expended, though this will be ten times greater than in the former case. Still, there are advantages in planting standard Apples, Pears, and Plums in grass, but it would be worth the while of intending planters to give more attention to the composition of the grasses employed for orchards; and the seedsmen who make a specialty of seeds for pasture ought to be able to prepare a mixture that would do the least possible harm, while yielding a sufficient herbage for feeding purposes. *F.R.H.S.*

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM GRANDE VAR. SANDERÆ.

THE typical *Odontoglossum grande*, having beautiful yellow flowers, barred with chestnut-brown, is a plant which is always admired when well cultivated. Considering, however, the large importations of the species at various times, it is a remarkable fact that exceedingly few show a marked deviation from the type. We have had recently that remarkable yellow form *O. grande* var. *Pittianum*, and now an importation by Messrs. F. Sander & Co., of St. Albans, reveals another quite distinct variety, which is worthy of recognition. The sepals possess two tints of yellow, viz., light lemon-yellow barred with pale Indian yellow, and exhibiting no trace of brown, as seen in the ordinary form of *O. grande*. The petals are of the same shining, light Indian yellow tint on the inner halves, and of a light lemon-yellow on the outer halves. The variation in the lip is still more marked, its white surface having in the middle area but one irregular semi-circle of yellow, instead of having the half nearest the column wholly covered with brown markings, as seen in ordinary forms. The callus on the lip is chrome-yellow, with orange-coloured markings, and the column chrome-yellow. This variety represents in *O. grande* the same sort of deviation as does *Cypripedium insigne* *Sanderæ* among varieties of *C. insigne*, which is a sufficient warrant for naming it in honour of the wife of Mr. F. Sander, who has done so much to further the interests of Orchids in our time. *James O'Brien.*

ORCHID NOTES AND GLEANINGS.

LÆLIA ANCEPS.

MANY persons complain that *Lælia anceps* is not blooming this season as usual. There is better growth in the plants but fewer spikes, both in the dark and white forms. Why this should be it is difficult to understand, for the hot, bright summer should have rendered the plants better able to produce spikes than for many a year past. It may be that it is too heavily shaded, and hence makes great growths which are not so floriferous as the smaller ones. In its home it as often as not grows on rocks, fully exposed to the sun, hence the plants should have enjoyed this summer to their utmost capacity. On rocks there is a great deal of condensation at night, owing to the cooler air coming in contact with the heated rock; this

bathes the plants in dew, in which they revel. Of course, we cannot imitate this condition in glass-houses, but we can approximate to it by not keeping the night temperature too high, to dry up that dew too soon.

I fear many of the older-named forms of *L. anceps* are now extinct, though new good varieties crop up occasionally; there are some of those named by Reichenbach in the '80s which seem to have disappeared. His herbarium is yet closed to all except the mites and the larvæ, that will doubtless render it useless by the date it is to be opened. Perhaps it is as well that it should be so in some cases, especially in *L. anceps*. Among the varieties which seem to have died out are *Calvertiana*, *Horsmaniana*, *leucosticta*, *obscura*, *Percivaliana acuta*, *radians*, *rosea* (Bull's var.), *rubra* (of the Philbrick collection).

In searching among the earliest records I find that the variety now usually termed *Barkeriana* (figured as such in *Reichenbachia*, vol. i., series 1, with sepals, petals, and lip uniformly very dark), does not conform to that figured in 1837 (*Bot. Reg.*, 1947), which was taken from Mr. Barker's plant. Its sepals and petals are much lighter in colour than the anterior lobe of the lip, and the deep colour is extended in a margin round the side lobes, and somewhat along their edge down to the base. There is no lighter area around the end of keel. The typical *L. anceps* figured in *Bot. Reg.*, 1836, plate 1751, has this white area around the keel.

Thus the distinctive marks of these *Barkeriana* are clearly not very dark sepals and petals, but a solid purple anterior lobe to the lip, and a similar-coloured margin around the side lobes.

I shall be pleased to see good forms of this popular "Winter Queen" when they open. *De B. Crawshaw, Sevenoaks.*

CATTLEYA O'BRIENIANA.

It is now nearly ten years since Messrs. F. Sander & Co., of St. Albans, first imported this handsome species, which at the time was considered somewhat of a botanical puzzle, by reason of its affinity to *C. dolosa*, together with some suggestion of *C. Loddigesii*. On being established, however, it proved to be nearest to *C. dolosa*, and the likeness to *C. Loddigesii* is almost lost. A flower sent by Joseph Broome, Esq. (gr., Mr. Axtell), from a plant grown in the bright clear air of Llandudno, represents it in fine form. The flower is 5 inches across from tip to tip of the sepals; the sepals and petals of a soft bright purplish-rose, with a shining silky-looking surface. The broadly expanded side lobes of the lip, which are folded over the fleshy column, are light rose outside, and pinkish-white inside, the disc primrose-yellow, and the broad front lobe dark rose.

ODONTOGLOSSUM TRIPUDIANS.

This species has never been such a favourite in gardens as *O. crispum* or *O. Pescatorei*, probably because it has not produced so many fine varieties as some of the other species. A good form of it, however, has many attractions. One of the best varieties we have seen is sent by Elijah Ashworth, Esq., Harefield Hall, Wimalow (gr., Mr. Holbrook). These sepals and petals are reddish-brown, with bright yellow tips; the broad fringed labellum has a spiny purple and white crest, in front of which are large rose-purple blotches. The front lobe of the lip and the narrow margins of the side lobes are white; the column white, marked with purple.

ODONTOGLOSSUM CRISTATELLUM.

A flower of a very fine variety of this rare species is sent by Elijah Ashworth, Esq. The flower, which is 3 inches across, has much the form of that of *O. polyanthum*, but in colour is nearer *O. triumphans*. The sepals are almost entirely of a light chestnut brown, the only other colour being a greenish spot at the base, and a bright yellow tip. The petals are also light chestnut brown, with a few yellow marks on each, and a yellow tip. The lip has a singular crest of many brown and white plates, and the blade is light chestnut-brown, with narrow white jagged margin. It is an attractive and uncommon-looking species, and the flowers are scented like Hawthorn. *J. O'B.*

KEW NOTES.

EUPHORBIA FOURNIERI, André; AND *E. LOPHOGONA*, Lam.—These two interesting species of *Euphorbia* have lately been introduced from Madagascar into French gardens. *E. Fournieri* was named in compliment to M. Fournier, of Marseilles, and distributed in 1895 by M. Sallier, of Neuilly, near Paris. It has an erect stem 1 foot or more high, brown and terete when old, green, five-sided, with crests of brown scaly hairs along the edges when young. The fleshy *Plumieria*-like leaves are oblong-spatulate, 5 inches by 2 inches, with a short, red-tinged petiole, the surface shining-green with grey nerves. The flowers are axillary whitish, small and unattractive. There is a figure in *Loddiges Cabinet*, t. 2477, of this plant, where it is called *E. lophogona*. This name, however, had previously been given to a quite distinct plant, so that the name *E. Fournieri* will stand good. The true *E. lophogona*, of which a figure is given in De Candolle's *Plantes Grasses*, t. 124, has also lately been introduced from Madagascar, a flowering specimen having been received at Kew from M. Godefroy Lebeuf. It resembles *E. Fournieri* in stem and leaf, except that the latter are smaller and wholly green. The flowers are, however, quite different. *E. lophogona*, having an inflorescence like that of *E. splendens*, except that the peduncle is shorter, and the bracts coloured pink. According to De Candolle, this plant was in cultivation in the Jardin des Plantes. Examples of both are now in the collection of *Euphorbias* grown in the Succulent-house at Kew. *W. W.*

DUBLIN.

"PLANTS AND INSECTS."—Under the above title, W. Moore, Esq., A.L.S., V.M.H., &c., gave a most interesting lecture before the members and friends of the Pharmaceutical Society of Ireland at their rooms, 67, Lower Mount Street, Dublin, on Monday evening, November 14. Mr. Moore prefaced his remarks by observing that the plants in their relation to insects may be looked at from at least three different points of view—

1. Insects injurious to plants; 2. Insect-trapping plants injurious to insects; 3. Insects and plants that live together to their mutual advantage.

The lecture was delivered from the third point of view, and extended over an hour and a half, being ably delivered, and beautifully illustrated by actual living examples from Glasnevin, and with lantern-slides lent by Professor T. Johnston, D Ph., of the College of Science, St. Stephen's Green.

Mr. Moore specially elucidated the question of the beneficial companionships, or symbiosis, of ants and plants, that Beccari and others have found existent in genera of Rubiaceae plants, such as *Myrmecodia*; and by Curtis in the case of a Malayan Fern. Passing in rapid review the many methods adopted by plants to attract useful insects, or to prevent the visits of certain kinds not wanted by them, the lecturer gave a lucid but all-too-short account of the contrivances resorted to by various Orchids, such as *Cattleya*, *Catasetum*, *Cypripeds*, and *Coryanthes*, in attracting insects to fertilise them. He alluded to the observations of Lehmann and other residents and collectors in South America, whose observations went to show that not only were Orchids generally fertilised by insects, but that even certain species of *Angraecum*, *Cattleya*, *Coryanthes*, *Epidendrum*, &c., were actually fertilised by one special insect only!

Robert Brown was, perhaps, one of the first botanists to point out the fact that Orchids generally were indebted to insects before they could produce seeds; and Kalm and others pointed out that humming-birds and honey-eating bats also assist in the fertilisation of Orchids and other flowers (*V. Kalm's Travels in North America*, vol. ii., p. 354).

The lecturer was listened to throughout with marked interest, not only by the authorities and students of the Pharmaceutical Society itself, but also by their numerous visitors, amongst whom was noticed Miss Webb, the young lady gardener, who was the "best man," or, Senior Wrangler, shall we say, of the Royal Horticultural Society's examination a year or so ago. *From our Dublin Correspondent.*

HARDY OPUNTIAS FOR THE ALPINE GARDEN.

THE new *Opuntias* discovered by Mr. Purpus in the mountains of the southern United States, are of great interest to the gardening world, and are especially suitable for rock-gardens. I saw them last spring in the Darmstadt Botanic Garden, near the house of Mr. Purpus, the curator of the garden, and brother of the discoverer. They were in the most flourishing state imaginable, and had stood the winter well, though this is very severe in Darmstadt. There are two excellent beds of hardy Cacti, comprising not only *Opuntias*, but *Cereus*, and *Mammillaria*. Mr. Purpus told me he had nearly forty different kinds or varieties there, all so large and sturdy as to seem growing quite naturally. Most of these Cacti came from the Grand Mesa territory, where the soil is half sedimentary, half of volcanic formation, and where the strata of the Rocky Mountains appear to have a special character.

Mr. Purpus found most of these Cacti at an elevation of between 5000 and 8500 feet; some even at an elevation of between 8000 and 9000 feet. The winter temperature there is very low, the thermometer often falling to -30° C. (-22° F.), a degree of cold unknown here. But, as with our alpine plants, the plants are protected by deep snow, and do not feel the cold. Of course, when the snow is melting and the spring coming, the nights are very cold, and often plants have to bear from 15° to 20° C. of cold. In the daytime the temperature is much higher, and the sun at these altitudes is very powerful.

The summer is exceedingly dry on these volcanic slopes, and plants must be specially constituted to withstand the drought. This explains the existence of numerous and widely-differing kinds of Cacti at such altitudes. Mr. Purpus keeps all his Cacti out-of-doors in winter, but protects them from rain and damp with a little roof, raised 2 or 3 feet above the plants. Thus kept dry they withstand the keenest frosts, and were quite luxuriant when I saw them at Darmstadt.

Mr. Purpus told me of the colours of the flowers of the *Opuntias*. Some, he said, are of the deepest orange red, and some of a light pink-carmine and rose colour. They flowered well with him at Darmstadt, and Mr. Späth, of Berlin, who bought the stock of Cacti from Mr. Purpus, was equally successful; at his nursery he has had a bed of them which has been, I am told, very brilliant.

These *Opuntias* are very interesting, and different from one another in growth and spines (which represent the leaves of the plant). Some are ornamental in aspect and spines, so that when in flower they are altogether very charming plants for rockeries.

The majority of these *Opuntias* are not yet sent out or named. Those already classified and in the trade are the following:—

O. brachyarthra, Engelmann and Bigelow.—Is a small creeping, sub-globose variety, with oval-oblong articulations, and bearing numerous tubers; spines white, and disposed in threes and fives; flowers yellowish and small. Very hardy.

O. camanchica, Engelm.—A well-known species, with large articulations and yellow spines; flowers large, sulphur-yellow. In cultivation for fifteen or sixteen years in our gardens, and quite hardy. *O. camanchica* is polymorphous and variable, judging by the numerous forms I saw, five of which at least were quite distinct. These were *O. c. albispina*, Hort., with white spines; *O. c. major*, Hort., with large articulations; *O. c. minor*, Hort., a small plant with small joints, and very spiny; *O. c. rubra*, Hort., Späth., with large and thin ovate articulations, bearing spines on the extremity only. The flower was carmine-red and brown shiny within, the stamens yellow. *O. c. salmonæa*, Hort., Späth., is like the last, but the flowers are brown, shading to yellow in the centre.

O. fragilis, Haworth.—Partially creeping plant, with small joints, large and strong spines; flowers small, yellow, with carmine stamens. It has been long known; but Mr. Purpus has introduced a hardy form.

O. humilis, D.C.—A dwarf plant, creeping over the



SARGENT

VIEW IN DR. HAMILTON RAMSAY'S GARDEN AT TORQUAY.

ground, with long and narrow articulations; spines whitish, and very numerous; flowers small and yellow.

O. Rafinesquiana, Engelm. — This plant differs from *O. vulgaris*, to which it is nearly allied in the thicker, broader, and longer articulations, which are of spatulate form, and by its solitary and large spines, from 20 to 30 mm. long. The flowers are larger, often reddish in the middle, with ten to twelve petals (*vulgaris* has eight to ten only).

O. R. var. Arkansana, Engelm., has large flowers, brownish in the middle, and the articulations are shorter and roundish.

O. rhodantha, Schumann.* — A fine species, with ovate, glaucous articulations, and long white spines; flowers large, silky, shining, and of a good carmine colour with gold-yellow stamens. It is beautiful, and the most brilliant of all the hardy Cacti, as it flowers very freely.

conditions they flower well and grow rapidly. In winter they only require to be covered over and protected against snow, rain, or damp; not against cold.

An old Cactus cultivator said to me, some years ago, that most of the non-hardy Cacti would be hardy if kept very dry in winter; and that same clever gardener kept for years, in life and good health, a *Cereus serpentinus* which he never took in during winter. *H. Correvo, Geneva.*

SAFFRON CULTIVATION IN KASHMIR.

In the *Gardeners' Chronicle* for September 25, 1897, p. 211, is an article on the cultivation of Saffron [taken from Mr. Walter R. Lawrence's *Valley of the Kashmir*. Ed.]. In this article I am sorry to observe several errors. The author appears to mistake the

be lifted at least every three or four years; even a wholesale plantation needs as much attention as an Onion-bed in the kitchen-garden, or a Hyacinth-bed in the flower-garden.

The treatment of the flowers is also strange. "The sun-dried flowers are beaten lightly with sticks, and winnowed. Then the whole mass is thrown into water, when the petals swim, and the essential parts of the flower sink; the latter are collected, and the parts which have risen to the top are dried, and again beaten with sticks, and then plunged into water. The process is repeated three times."

These various proceedings, the method of producing seeds and seed-bulbs, cultivation, and treatment of the flowers are not practiced in Kashmir nor in Europe, and I may add that they are virtually impracticable. The plans followed in Kashmir are the same as in France and Spain, and if any local variation of method occurs it is quite insignificant. The methods are well known and described in several books. The facts above given as to the methods of cultivation and the harvesting of Saffron, as practised in Kashmir, have long been known to me. Moreover, they have recently been confirmed, at my special request, by three competent authorities connected with Kashmir. One of them grew Saffron on a large scale; another is still the manager of important plantations in that country. *P. Chappellier, Paris.*

CANNAS.

THE Editor of *Indian Gardening*, the excellent representative of horticultural interests in Peninsular India, has been good enough to send us the drawing from which our illustration (fig. 110) has been taken. It affords an excellent example of that dissociation of previously mixed elements, to which we have often alluded, as one of the principal causes of sports. In the specimen figured of *Canna Parthenope*, we have on one and the same spike flowers of the yellow Austria, fig. 110, I, the yellowish-scarlet Parthenope, III, and parti-coloured flowers, II, half belonging to one variety, half to another. One side of the rachis of the spike was green, the other side reddish. The "Austria" occurred on the green side, the Parthenope on the red side of the stalk.

The flowers were thus arranged:—First pair, one pure Austria, and one-half Austria, half Parthenope; second pair, one dimidiate flower, and one pure Parthenope; third pair, one pure Austria, and one half-and-half. The leaves did not differ from those of Parthenope.

FORESTRY.

OUR WOODS AND FORESTS.

(Continued from p. 301.)

WHATEVER mistakes may have been made in the management of our Crown woodlands in the past, and whatever restrictions may be placed upon the enclosure or treatment of certain areas within them, no adequate reason exists why their future management should exhibit those features which have hitherto led to unsatisfactory results. Of course, where nothing of a definite nature has been attempted, it is, perhaps, hardly correct to say anything hitherto done in them has been a failure, but we have two standards by which they can fairly be judged, the æsthetic and the economic, and it is obvious that they come up to neither in a general way. We may find a few acres here and there which may satisfy the most fastidious taste, and we may also come across individual trees or small clumps of timber which leave little to be desired as examples of economic sylviculture. But taking the whole area devoted in some shape or form to the growth of timber, it cannot be said that our Royal forests impress us very favourably as examples of good forestry, or as types of natural and picturesque forest scenery. For this we do not blame the officials in charge altogether. As in the case of private-estate foresters, precedent and official tradition have a great deal to do with their work. "Reform" in a Government department is regarded very much as a bull regards a red rag, and the unfor-



FIG. 110.—A SPORTIVE CANNA.

I, "Austria;" II, half "Austria," half "Parthenope;" III, "Parthenope."

O. xanthostema, Schum.* is very similar to the former in colour of the flower, but has dark yellow anthers, and the fruit is spiny (quite glabrous and without spines in *O. rhodantha*).

O. x. var. elegans, Hort., has large pinkish-rose flowers, silky, shining, and a large number of petals.

O. x. var. fulgens, Hort.; the flowers are large and of a scarlet-red colour.

O. x. var. rosea, Hort., has very numerous carmine-rose flowers.

All these *Opuntias* are perfectly hardy in Darmstadt, so that they are likely to be so in England. They are all useful additions to the rock-garden. To keep them in good condition and long in flower, they must be planted in a sunny and well-drained place, so that the water never remains in the soil. The subsoil must be very deep, stony, and gravelly, so that the water can pass through very quickly. Then the plants can be watered often and abundantly, as Cacti require more than is generally believed. Under such

seed, properly so-called, for the seed-bulbs, which may be used for planting in the fields when the middle-sized corms are scarce. He then speaks of a method employed in Europe to produce these seeds and seed-bulbs. But this plan is nowhere followed in Europe or elsewhere, and for this reason. First it must be said that Saffron does not yield seed, as, even in the most exceptionally favourable years, scarcely one capsule is found on 10,000 bulbs; therefore, seed and bulbs raised from seed are not found in cultivation.

As to the corms, it has never been attempted to produce these in any special way, as the result of such an operation would be wholly insignificant. What shall I say of the method of cultivation described in the article in the following terms? "The plots where the Saffron is to be grown must remain fallow for eight years, and no manure or water given to them. When once the bulb has been placed in the square it will live on for fourteen years without any help from the cultivator." All cultivators of Saffron and all horticulturists know that the corms should

* In *Monatschrift für Kakteenkunde*, July, 1896.

tunate individual who suggests it brings down a storm of indignation upon his head, frequently without furthering his object in any way.

Then, again, there is the zealous local resident who detects in any little alteration in the mode of procedure an "attempt to destroy one of the few remaining bits of wild scenery still left us, &c.," and who invokes the aid of the daily press in calling public attention to a matter concerning which the public, as a whole, care little and know less; but the effect of which is usually to nip the proposed reform in the bud. An instance of this form of agitation occurred in connection with Epping Forest a few years ago, and although it was ultimately the means of a much needed improvement being effected, ignorance of what really constitutes picturesque scenery prompted the agitation as much as anything.

The average visitor to our public forests may be quite able to appreciate the beauty of what he sees, but he cannot be considered a fit judge of the policy adopted in the management of them, unless he takes the trouble to ascertain the principles upon which that policy rests. Should he do this, he would, we are afraid, find in many instances that no very definite policy exists, and for this, the British public has to thank itself. So long as the existence of these woodlands is passively accepted as an every-day fact, and the possibilities they present for both the present and future are ignored, they will never fulfil those functions which their character as public property requires of them. So long as sheer inactivity is the only policy approved of by a few individuals who constitute themselves the mouth-piece of the British public, we can hardly expect the authorities to invite attack by performing a duty which no one expects them to perform. But is this to go on for ever? Have those who clamour so loudly over the exclusion of cattle from 200 or 300 acres of ancient woodland any legal or logical right to dictate as to the manner in which national property shall be managed? If their æsthetic education is so far in advance of the average, how is it that they are able to view with indifference such miserable specimens of scenery as their own labours have been chiefly instrumental in bringing into existence. Surely the value of a few hundred pounds' worth of grazing is not sufficient reason for practically throwing away a valuable property, and converting it into a bare common, as will eventually be the case with a good deal of the New Forest under present conditions. Our crown woods ought to perform a double duty, and be the means of advancing both the æsthetic and economic education of the public, and by proper management they could do this far more effectually than is the case at present. But proper management is impossible until some definite plan of operations is formulated by the authorities, and adhered to throughout a lengthened period, and not altered with every change in the staff, or to suit the momentary ideas of irresponsible individuals. A short time ago a working plan for the Forest of Dean was drawn up by an official in the Indian Forest Service, and intended to serve as a guide to the surveyor of that forest during the next twenty years. So far as it goes, this working plan is no doubt a very good one, but it simply regards the area with which it deals as a timber farm, out of which as much revenue as possible is to be made, and entirely neglects the picturesque aspect of these woodlands, both actual and prospective. To sacrifice all pecuniary interests in such large areas to the picturesque, would not only be unnecessary and wasteful, but would fail to benefit the public in whose interests it might be done. But on the other hand, we think some attention ought to be paid to the improvement and preservation of those spots which arboreal vegetation and the physical features of the ground have already embellished with such success. Take, for instance, the banks of the Wye below Symond's Yat, in the High Meadow woods. At present these banks are chiefly covered with coppice which is periodically cut over, and which at any time is devoid of any attractive features beyond a dead bank of foliage. Judiciously planted with Conifers, Birch, &c., to form an ordinary woodland

growth, the scenery along this picturesque river would be greatly improved without very great pecuniary sacrifice. Dozens of similar instances could be given where judicious treatment might add immensely to the already attractive features of these woods without decreasing the area devoted, or which ought to be devoted, to the growth of timber, and yet in the working plan referred to we find them completely ignored. When so much attention has been drawn to those attractive features of the New Forest which exist at the present time, it is only reasonable to demand similar consideration for the whole of our Crown woods which are available for public pleasure resorts. If the citizens of London found it necessary to check the work carried out in Epping Forest by their own committee by appointing a body of experts to look into the question of cutting down a few stunted pollards, surely public opinion ought to be represented in any scheme devised for the future management of a forest, the possibilities of which are so varied and extensive, and which is within easy distance of several populous centres. *A. C. Forbes.*

(To be continued.)

MARKET GARDENING.

HARDY FRUITS. — THE APPLE.

(Continued from p. 234.)

Now we have to consider varieties which are best kept back till ripe, or nearly so, before putting on the market. At one time this was a very profitable class, but the introduction of fine fruit from America and Canada, and later from Tasmania, has partly spoiled the trade in them, and unless one has the advantage of sufficient airy, dry, and frost-proof storage, it will not answer commercially to attempt this plan. Even gardens of some extent and importance are but poorly furnished with fruit stores, these being, in many cases, badly constructed and fitted as regards ventilation and regulation of light. They are generally lean-to sheds, in the rear of the vineries, or, in some cases, over the bothy, or tool-house. In this case it is very difficult to bring stored fruit to its maximum of flavour, colour, and finish, and avoid a large percentage of speck and rot in the meantime.

A dry, bright day should be taken for gathering fruits, and the greatest care expended in handling it and putting it in the baskets, rejecting all magotty, bird-pecked or otherwise injured fruits, and all small and ill-shaped ones. The fruit may be left for a day or two in the baskets to get cool, and then placed on the storing-trays, which should be formed of laths or battens placed so closely together as to prevent rats and mice making their way up to the fruit. In some cases, a thin layer of clean Wheat-straw should be laid lightly across the trays, being careful not to impede ventilation.

The smooth waxy-skinned sorts, as Lord Suffield, Maux Codlin, Warner's King, &c., may have become moist and greasy (sweating, the growers call it), and if time is of little importance, it may be advisable when this phase of ripeness has arrived to wipe the fruits dry with a soft cloth, and then finally arrange them in the trays.

Such work can be done in wet weather, and it will add greatly to the appearance of the samples, while strengthening their keeping qualities.

To amateurs and growers of limited quantities, a simple contrivance patented by Mr. H. A. Orr, Bedford, is very convenient. It consists of trays, which are made to fit one in the other, and are easily lifted off when full for examination or use. Even when first gathered the selected fruits may be picked into to them, thus saving further handling. The trays, when placed one in the other after filling, are neat, and occupy but little space, while a label can be attached, with the name of the fruit and its period of ripening.

The keeping quality of varieties of Apples varies much. I have seen Gooseberry-Pippin, three years old, exhibited, though a little shrivelled; a dish of the current year, and one each of the seasons before, upon the same table. Yet sorts like Mr. Gladstone

and Lady Sudeley are best gathered and eaten from the tree—most fruit catalogues give full instructions as to this.

These periods are indicated by the swelling of the stalk (or "strig," as they say in Kent) where it is attached to the spur, and by the ease with which the fruit can be detached; but an invariable rule is, when the pips are of a full rich brown colour, the crop may be safely gathered, while the penalty for gathering too soon is shrivelling, and when too late, loss of flavour and tendency to decay. *Experience.*

FERN CRESTS.

APART from the main distinction between Ferns and flowering plants, viz., the reproduction by spores on the one hand, and by seeds on the other, Ferns have another and very striking characteristic of their own in their faculty of sporting into crested or tasselled forms. Comparing the wide range of form of fronds with the equally wide range of form of leaves, we find it possible to bring many very close parallels together, fronds and leaves aping each other in all their multiform modes of development. Despite, however, this similarity of shaping, with the single exception of that extremely Fern-like plant, *Asparagus plumosus*, which has yielded a crested variety, we know of no case where leaves proper have developed that apical distension and division which forms a tassel, though in Ferns this is so common that nearly all our native species, and many exotics, have yielded very marked examples. Normally, the fronds and their divisions end in points more or less acute, and although the divisions of a pinnate, bipinnate, or still further divided frond, are developed by repeated multiplication of the apical cells, the midrib of each division is normally simple, terminating in a point at which the cellular growth ceases, hardening into the epidermal tissue peculiar to the species. Leaves, as we have said, do this all but invariably. With crested Ferns, however, we have all grades of a secondary branching of the midribs, not on the angular plan peculiar to the species affected, which determines the arrangement of pinnae, pinnules, or pinnulets, in the plane of the frond, but in a radial fashion, which may lead to a flat, fan-like extension, or even form a corymb, as the termination of the frond and its subdivisions. This capacity displays itself erratically among otherwise normal plants by twin fronds, forked tips, and irregularly-forked pinnae, but in these cases there is no evidence to prove that the spores will yield plants similarly characterised, while there is no doubt whatever that accidental damage to the crown or axis of growth will lead to such furcation, the crippled fronds, checked in one direction, developing abnormally in another. These are, however, absolutely distinct cases from those crested Ferns which are symmetrically tasselled throughout, and which yield such typical progeny through their spores. How or why these are so affected no one knows. A solitary thoroughbred crested plant is found growing wild amid thousands of its normal fellows; the most assiduous search fails to reveal any Fern of intermediate type or any local or partial sport in its neighbours which might lead up to it by shedding affected spores. We can only assume it to be one of Nature's "jumps." Curiously enough, although in extreme cases the energy of the plant must be drawn upon very largely by the extension of growth, it does not usually, as in the case of plumose or extra leafy varieties, detract from fertility. Spores are produced in their normal abundance, and the sori extend even to the crests themselves. These spores as a rule yield the crested parental form, and it is interesting to note that so firmly is the faculty of apical division implanted in the system, that the primary fronds, the tiny firstlings produced by the prothallus, have almost invariably a clear furcation at their tips, an incipient tassel. The most cristate wild frond has so far not got beyond a tertiary crest, i.e., a tassel on the pinnule or division of the tasselled pinna borne on a frond with a tassel at its tip. By selective culture, however, cresting to the fifth degree has been reached, *A. f. f. superbum percrestatum* (D.) being five times

vided, with the fourth division radially divided. Further than this it seems impossible to go, and in considering such a development, one is struck with wonder at the systematic regularity of growth which can thus alternate the two distinct styles of cell division, the one at the normal angle of the species, which may be likened to a crystalline growth, and the other radiating at all angles from given centres, and yet in the larger crests bearing lateral sub-divisions of the other class. Although the same principles rule throughout the crested forms of all species, the results are very diverse, owing to the widely different characters of the fronds affected. The extreme forms, however, viz., those in which the frond is so divided from the outset that the flat character is wholly lost, and merged into a mossy conglomerate growth, become curiously alike, though the normal species may be utterly dissimilar. The finely-divided Lady Fern, and the strap-fronded Hart's-tongue, entirely lose their specific differences in their dwarf moss-like forms of *A. f. f. velutinum* and *A. v. densum*, Kelway. In this latter species the Hart's-tongue, beginning with mere forked tips, has varied in the cresting way until in one direction it has assumed the phase of a ramified skeleton fan, in another a heavily tasselled strap; and in another, after arriving at a solid ball of leafy ramifications covered with bulbils (*A. v. Kelwayi*), one of these bulbils sported anew, and produced a dense mossy cushion built up partly of much-divided tiny fronds and partly by a myriad tiny plantlets developed in situ from bulbils.

The mode of cresting is as diverse as are the forms it assumes. In most cases, as the frond unrolls, the tassels are seen to be already present in all their detail, and, like the petals of a Rose or the wings of a butterfly, only need expansion to be perfect. In other cases, however, the opening frond displays but little evidence of cresting, a tiny forking alone giving promise of later development. Presently, however, as the frond expands, this little beginning will fork and fork again and again until a handsome tassel is produced, the growth in such cases often continuing until the growing season is over. In *Pteris serrulata* var. *Applebyana* the fronds perfect normally though slenderly, a slight woolliness at their tips alone indicating growth, these tips then split dichotomously, into hundreds of slender strands, and form even a secondary growth the following season.

That cristation is a transmissible character by crossing has been abundantly proved, and the particular type of tassel being truly imparted, is good evidence of the cross. Mr. Schneider has even succeeded in imparting the crest of our *Polypodium vulgare* var. *cristatum* to two exotic *Polypodies* (see figs. on p. 362 and p. 363 in our last issue); and Mr. Clapham managed to impart the tassel of *P. v. bifido-cristatum* to that finely cut variety known as *P. v. elegantissimum*, in which direction much remains to be done.

The curious exception above cited of *Asparagus cristatus*, merits a further word or two. The great similarity of the leaves of this plant to the fronds of a Fern, has led to its being popularly called the *Asparagus Fern*; and the fact that it has sported into a truly crested variety with bunch tassels at top and sides, points to some correlation between cresting and cutting of this typical form which might repay investigation. *Chas. T. Drury, F.L.S., V.M.H.*

FASCIATION.

STEM-FASCIATION, as is well known, means that particular ribbon-like and plane enlargement of parts of the stem and branches with which most interesting abnormalities in leaf arrangement are often connected.

About a month ago I came into possession of four interesting specimens of fasciation of *Oxalis crenata*, one of which is especially striking for its very distinct ribbon-like and plane enlargement. They were found among other normal specimens which were grown in the garden of the Government Horticultural School at Wageningen, Holland, and I believe that hitherto only one instance of fasciation of *Oxalis crenata* has been described, namely, by Mr. François Crépin, in the *Recueil de faits tératologiques II.* (*Bull. de la Société Royale de Botanique de Belgique*, t. iv., 1865.)

The specimens were cut off just above the ground, that is, a little above the neck of the root; and immediately above the cut every specimen showed the ribbon-like enlargement, which however obtained the greatest degree of development after the first ramification.

In addition, quite normal branches were also found on each of the specimens, differing in absolutely nothing from the normal form, as shown in the photograph. One of the specimens measured nearly 6 inches across its greatest development; this, I believe, is neither surpassed nor equalled.

I intend giving a full description of the alterations and anatomical differences caused by the enlargement of the stem, and its ramifications in the distribution of the fibro-vascular bundles. Can the enlargement of the stem have been caused by the influence exerted by some species of bacterium during the plant's growth? May this hypothesis become a starting-point for further researches and investigations? *Dr. J. Th. Cattie, Director, Wageningen, Holland, Nov. 3, 1898.*

[The condition is so common in strong-growing plants that we have not thought it necessary to reproduce the illustrations which Dr. Cattie has been obliging enough to send.]

Some plants are more subject to it than others, and in some cases, as in the Coxcomb, the Teasel, *Sedum monstrosum*, &c., &c., the condition has become more or less fixed and hereditary. It is not clearly ascertained whether the peculiarity is due to the subdivision of one original growing point, or whether there are from the very beginning several growing points which do not separate one from the other, but remain in union and constitute a flat or often a spirally-twisted band.

Mr. Frank Webber, of the Tonbridge Nurseries, sends us a photograph of one of the largest examples we have seen. The plant in this case (a Vegetable-Marrow) was 28 feet long. About a foot from the root the stem began to flatten, and then gradually widened till at the top it measured 12 inches across.]

PLANT NOTES.

ALOCASIA SANDERIANA.

THIS handsome Aroid is well worthy of a place among choice stove-house decorative plants. It is of compact habit, somewhat smaller than most *Alocasias* of this type, but for richness of foliage it is surpassed by none. The dark, lustrous green leaves are barred and edged with silvery bands, the back of the leaf is coloured deep claret. They measure about 6 inches in width by a foot in length, the leaves of very old plants becoming much longer, but do not widen in proportion. The plants grow best in such a compost as would be afforded *Cattleyas* in pots, giving plenty of drainage, using comparatively small pots with holes made in the sides for the admission of air, following up the stem as it grows with rough pieces of peat loosely tied around it. The plant refuses to root into a close compost, generally resulting in the decay of the tender rootstock. I have tried to "set" seeds of a large number of flowers, but have not succeeded. *A. Sanderiana* may be propagated, however, by division of the rootstock or by small tubers, which it produces freely; these should be left on the parent plant till they have formed independent roots and leaves. I have not succeeded in getting a single one to grow when cut off in a dormant state. It is a native of the Philippines.

TYDÆAS.

These useful stove-house plants have now become exceedingly popular, and judging from the improvements made of late in the forms and coloration of the flowers of new *Tydæas*, they have a future before them such as the *Gloxinia* and *Streptocarpus* now occupy. A large and very varied lot of beautiful named varieties are offered by nurserymen specialising Gesneraceous plants, at prices which place them within the reach of all. With a few of these to start with, or with a packet of seed obtained from a good source, it is possible, by careful hybridisation, to secure a very varied lot of *Tydæas*, that would prove

very useful for stove-house decoration at all times of the year. There is but little trouble in setting seeds; a single plant in good health will produce seed sufficient to raise many hundreds of plants. The plants require a temperature of not less than 60° to keep them up to their proper standard of merit; if grown in low temperatures, even the best varieties degenerate to a worthless degree. They may be used for conservatory decoration during the summer months, but the flowers that open there are not so good as those that opened in moist stove-house temperature. A compost of rich loam with one-half its bulk of leaf-mould, with a dash of silver-sand, suits the plants well. Give them plenty of water whilst growing, with an occasional application of some concentrated manure, keeping the plants drier as they go to rest, placing them in a cool place where they may be watered occasionally, to prevent the scaly rhizomes shrivelling. I send for the Editor's inspection some hybrid varieties, raised at Isleworth by crossing plants produced from seed acquired several years ago. *Geo. B. Mallett.*

RHUS TOXICODENDRON.

This is the finest plant we have here for autumn-tinted foliage, and it has been a beautiful object this autumn, although many plants did not colour so well as usual. Is there any well-authenticated record of its poisonous properties, or is it all a myth? [No]. An old man, who has pruned and trained the plant for more than thirty years, tells me he has never suffered any ill-effects from handling it, and did not know it was poisonous; perhaps it is necessary to take it internally, but I think I have read somewhere of the poison being communicated through the skin. *W. H. Divers.* [The utmost caution is necessary in handling this plant, though some people do not suffer from it. *Ed.*]

FLOWER-GROWING IN ENGLAND.

THERE is no doubt that flower-growing is greatly extending in this country, and that competition among home growers is becoming more and more severe. Foreign supplies of flowers have increased, but not nearly so greatly in proportion as home supplies; and it seems clear that home-growers have gained ground in relation to their foreign rivals, except with respect to flowers for the growth of which foreigners have extraordinary natural advantages. It has already been intimated that there is a danger of the culture of the *Narcissus* being too much expanded; also that the *Chrysanthemum* is produced in excess of the demand. Again, in the production of Violets, the warm and sunny South of France has an advantage not possessed by this country, while Holland maintains her hold upon the Hyacinth and Tulip trade for a similar reason. But whether the production of flowers as a whole is gaining ground upon the consumption or not, it is difficult to determine. It is true that the prices of flowers have fallen generally, as those of nearly all other commodities have; but production, at any rate under glass, has been cheapened, and if a fair profit can be obtained, the fall in prices, without which the existing consumption of flowers would be impossible, does not necessarily imply over-production. There is some difference of opinion among growers upon this point; but nearly all agree in stating that profits are now so small, that production on a large scale is necessary to provide a decent income. Mr. George Moore, of Covent Garden, who is certainly one of the best authorities, is of opinion that supplies of cut flowers are "pretty nearly overdone," as indicated by the great glut that occurred in the summer of 1897. Prices, he says, are much lower than they used to be and only the best growers do well.

Thus, in flower-growing, as in nearly every other career, inquiry leads to the conclusion that "there is plenty of room at the top." In this industry, moreover, there is such a very wide scope for the exercise of superior skill, industry, and alertness, that it is not surprising to find some who are engaged in it doing remarkably well to all appearance, while others are struggling on and hardly paying their way

That a man with only a little capital, starting in a small way, has many disadvantages is certain; also that his chance of saving money and extending his business quickly is much less than it was a few years ago, but energy and superior capacity enable many such men to overcome all difficulties and attain success.

To the casual looker-on, who knows nothing of the drudgery of the industry, flower-growing seems a delightful method of getting a living. That it is an entrancing pursuit there is no doubt; but it is equally true that it is a very arduous one, requiring the most careful forethought, ceaseless attention, and abundant energy. Fortunately for those who might be tempted, without any knowledge of it, to embark capital in it, flower-growing, if at all comprehensive in scope, so obviously requires a varied and extensive technical knowledge, that any one can see that a thorough training is necessary to a man who intends to adopt it as a business, especially if hothouse flowers are to be produced. *William E. Bear, 70, Onslow Gardens, Highgate. (Extract from Journ. Royal Agric. Soc.)*

FRUIT REGISTER.

PEAR BEURRÉ D'ANJOU.

THE flavour of this Pear is very delicious from trees grown on chalky soils, although the fruit is not so very large. It is of handsome shape, and fine colour. In East Kent the fruits ripen early in October, and they keep sound for a longer period than some other varieties which begin to ripen at about the same season. I consider Beurré d'Anjou well deserving of rank amongst our best October Pears.

PLUM BLUE IMPERATRICE.

I have this Plum bearing very freely on a south wall. The fruit is of a medium-size, firm, and of very passable flavour, and it keeps in fine condition when left on the trees till late in the season, only it must be netted so that the birds are unable to get at it.

WYEDALE PLUM.

As a late variety, this Plum will be found very useful as a cooker. It hangs in ordinary seasons till late in October and the early part of November. The fruits carry a very heavy bloom, and the trees bear freely in most seasons.

KIRKE'S BLACK PLUM.

When grown on a wall, as here, the flavour of this variety is, perhaps, one of the best of any black Plum that is grown, and it has few equals as a dessert fruit. The variety is a free cropper on the chalk, and the fruits attain a fair size. *H. Markham, Northdown Margate.*

TREES AND SHRUBS.

THE TUPELO, OR SOUR GUM (*NYSSA SYLVATICA*).

SOME American trees, which in their own country we read of as amongst the most striking of those that make the autumnal glory of the American woods, do not always maintain their reputation in this climate. Of these, the Tupelo, happily, is not one. I have not been fortunate enough to see it in its native state, where it is, according to Sargent, one of the most distinct and picturesque of North-east American trees, sometimes 100 feet high, the leaves dying off in autumn a bright scarlet. But even here, during the last few weeks, it has certainly been one of the most beautifully coloured of all hardy trees and shrubs. The leaves are narrowly obovate, and about 5 inches long; in summer they are firm in texture, and dark-green, but latterly of a clear, glowing orange colour, verging into scarlet. The tree is widely spread over the eastern United States, and is often to be seen on the borders of swamps, growing in wet, undrained soil; but Sargent says it is on high and, of course, drier wooded slopes in the Alleghany region

that it attains its largest size. Here in Britain, under duller skies, it ought, I should say, to be planted in deep and moist, but certainly well-drained soil. It would be interesting to know if there are any large specimens of the tree in this country. There ought to be, for it is known to have been in cultivation near London close on 150 years ago.

ST. DABEOC'S HEATH (*DABEOCIA POLIFOLIA*).

For a plant to have been in flower in June, and to be still in flower in early November, is a strong recommendation, especially when it is as charming a shrub as St. Dabeoc's Heath. And it is not merely bearing a few straggling blossoms, its crowd of spikes make a really bright and (at this season) even striking display. This, of course, is largely owing to the open and often sunny weather experienced during October, but whatever the season may be, this little shrub is always attractive during the latter half of summer and autumn. Its pitcher-shaped flowers are of a bright purple in the type, but there is also a variety with pure white flowers (now the fullest in flower), and another which has them both white and purple, the two colours often occurring in the same flower. The species is a native of the extreme west of Europe, including the west of Ireland, where originated the popular name of St. Dabeoc's Heath. Some objection has been made lately to the transposition of the vowels "o" and "e" in the scientific name, but authors have frequently availed themselves of a similar "botanical license." Not many of us, perhaps, would associate "Stranvæsia" with a gentleman named Strangways.

ALPAPAPPUS ERICOIDES.

We have lately had in flower a small plant of this curious shrubby Composite. It has already been figured in these columns (see *Gardeners' Chronicle*, September 12, 1896, p. 301), from a plant in Mr. Gumbleton's garden at Belgrove, near Cork. It has also succeeded well in the south of England, Major Gaisford having had bushes 4 feet or more high. It is, perhaps, questionable whether it will be hardy near London; but even if it is not, it certainly ought to be grown in the warmer parts of these Islands, as much for its beauty as its interest. As the specific name implies, its leaves suggest those of a heath; they are crowded in fascicles all up the branches, and are from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. The flower-heads appear during the autumn months on short shoots, which are mostly crowded at the end of the branches, where they form a cone-shaped inflorescence. The ray-florets number three or four to each flower, and are bright yellow; the disc-florets are also yellow, the whole flower-head being $\frac{1}{2}$ inch or so across. The species appears to be fairly common near San Francisco in California, also on the dry hills near Santa Barbara in the same State. *W. J. B.*

LÆLIO - CATTLEYA × HENRY GREENWOOD (L.-C. × SCHILLERIANA × C. × HARDYANA).

THIS is a garden hybrid of remarkable beauty and interest, the plant having, so far as has yet been proved, the property of flowering at two seasons, viz., spring and autumn. The hybrid is of extraordinary interest as being the outcome of a cross between two natural hybrids, viz., C. × Hardyana (*Warscewiczii* × *aurea*) and L.-C. × Schilleriana (C. *intermedia* × L. *purpurata*), the parentage of which has also been verified in each case by seedlings raised in this country from artificial crossing.

L.-C. × Henry Greenwood, the subject of our illustration (fig. 111), was raised by M. Chas. Maron, of Brunoy, Seine-et-Oise, France, who first exhibited the plant at the Ghent Quinquennial Show this year, and obtained the 1st prize as the best new garden hybrid Orchid, and also a special Silver-gilt Medal. The plant became the property of Henry Greenwood, Esq., Highfield, Haslingden (gr., Mr. Gill), who exhibited it at the meeting of the Royal Horticultural Society on October 25 last.

The sepals and petals are white, tinged and veined with bright, light rose, and the lip blush-white at

the base, the disc clear chrome-yellow, and the front lobe and tips of the side-lobes rich crimson-purple shading to rose towards the margin. The flowers are fragrant. A similar plant was shown by Messrs. B. S. Williams & Son, of Holloway, at the Royal Horticultural Society's meeting on the 11th of last month, the exhibitors receiving an Award of Merit for it. The inflorescence in each case bore three flowers.

THE HERBACEOUS BORDER.

ASTER TRADESCANTI.

THIS old variety, which is one of the latest of the Starworts to flower, has done remarkably well this season, and some plants are still in full beauty, its small starry, white flowers with a yellow disc, combined with its handsome foliage, making it an attractive object in the borders at the present time. The past few weeks have been favourable to the development of the plant. Even when not in flower, the growths are useful for associating with other of the earlier-flowering Michaelmas Daisies, and even in seasons of early frost it is a useful plant for this purpose. *C. Herrin, Droghmore.*

FOREIGN CORRESPONDENCE.

THE TREATMENT OF NEWLY-IMPORTED PLANTS.

IF Cactus plants arrive between April and September, I clean them very thoroughly, removing all broken or rotten roots, put them at once in a mixture of ashes, sand, and a little mould, and keep them for a few days (ten) quite dry, and in a little shade. After ten days a small quantity of water is given them overhead during sunshine.

After the lapse of a month, I keep the materials slightly moist, and do not remove the plants for three months. I then take out every plant and pot it. If any of them are still without roots, I put them again into the same bed, and keep them therein until roots form, which sometimes does not occur for two years. If the plants arrive in the period from October to March, I treat them in the same way, with the exception that I do not put mould in the mixture at all, and do not water the plants overhead, and only wet them a little after the plants have been one month therein. I do not expect to find any roots before May, when I pot them and treat them as I said before. I do the same with all Cacti without exception.

Now if plants arrive partly rotten, I cut out the rotten parts; and if in winter or in wet weather, I dry them before a fire after having well rubbed the wound with a piece of wool. In summer I dry the wounds in the sun, and when all is well dried, I lay the plants with the wounds upwards for from ten to twenty days, and when the parts appear to be healed, I put them on to broken ashes, moisten them overhead just a little, and so on as with sound plants. Still, many plants are lost, but if the loss is not greater than 10 per cent., you may be glad, for the result is very good. *Franz De Laet, Contich, Belgium.*

FORESTRY DEMONSTRATIONS.

ONE of the first plans of usefulness emanating from the Division of Forestry at Washington since Mr. Pinchott has succeeded Dr. Fernow, is that set forth in Circular No. 21, under the title of "Practical assistance to Farmers, Lumbermen, and Others in Handling Forest Lands." The proposition, as it affects farmers, is one of local forestry demonstrations under the management of the Government foresters. A farmer who has a good wood lot, which he would like to manage to the greatest advantage, applies to the Agricultural Department for help. With the usual amount of Government red-tape, the department foresters prepare a working plan, providing for the renewals, improvements, and cuttings in the specified woodland. This work is carried out by the farmer at his own expense, but under the management and with the constant advice of the Government

foresters. The plan seems fit to work in certain cases, and a few such demonstrations scattered through the country may be expected to do a great deal of good.

"THE EVOLUTION OF OUR NATIVE FRUITS."

This new book, by Professor L. H. Bailey, is just off the press. It is not too early to say (especially as this is only a private opinion) that it is the best book which Professor Bailey has yet produced. Perhaps everybody else will not think so, and it is hardly probable that the book-buying public will endorse

into any of its precursors, and it all shows in the result. And the result is eminently satisfactory. *F. A. Waugh, U.S.A.*

THE APPLE CROP.

The report of the *American Agriculturist*, which is one of our most reliable sources of information, estimates the entire commercial Apple-crop in the United States, for 1898, at 27,681,000 barrels, against 41,536,000 in 1897, and 69,879,000 in the year 1896. This presents a remarkable shortage. It is the smallest crop known for many years—in fact, since there has been a commercial Apple-industry in

scarcity will give the American fruit-grower a good opportunity to recover from the misgivings left in his mind by the over-production of 1896.

CULTURAL MEMORANDA.

CALCEOLARIA AMPLEXICAULIS.

My motive in penning this addition to Mr. Molyneux's remarks, that appeared on p. 292, October 15, is to say that it can be propagated quite freely in spring as well as autumn. In some places autumn



FIG. 111.—LÆLIO-CATTELEYA × HENRY GREENWOOD. (SEE P. 382.)

this opinion with their purchases. Book-buyers and book-critics never agree anyway, and the sale of a book is by no means an exact guide to its worth. This book really gives an account of the horticultural development of those numerous fruits which are native to the continent of North America. It tells about their present status, and gives some notes of the work which has been spent in their amelioration. Of course, it reviews most critically the botany of the species concerned, and makes many emphatic contributions to botanical classification, especially in the genus *Rubus*, which has been given a surprising shaking-up. More time, energy, research, and love of the subject have gone into this book probably than

America. Many people in this country will this year be obliged to do without their usual Apple supply. The quality is also below the average, taking the whole crop together, though the best Apples are being naturally put on the market. Michigan is the only Apple-growing State which has anything like a full crop. Nova Scotia has done better than any section of the States, with the possible exception of Michigan. The estimated surplus in Nova Scotia for this year is 250,000 to 300,000 barrels, compared with 85,000 last year, and 500,000 in 1896. These Apples nearly all go to England. The New England crop is fairly good, especially in certain parts of New Hampshire and Vermont. But these two years of

cuttings are not produced at all freely. This is often the case where the soil is of a very light, sandy, or chalky nature. Last spring twelve months I potted up about a dozen of the strongest of the previous autumn-inserted cuttings, my object in doing this was to try and flower them in pots with a view of getting seed from them. I thought that if this were possible, I could reproduce them freely from seed. I did not succeed in getting seed to ripen. The plants were stored in a cool Peach-house last winter without cutting them down. An abundance of young growths was produced in the spring, and being short of autumn-rooted plants, I inserted a quantity of these soft cuttings in pots, and

put them in a propagating-case, where they rooted as freely as *Lobelias*. I frequently use this *Calceolaria* as a sort of "dot" plant amongst beds of *Calceolaria Golden Gem*, and the two shades of yellow harmonise very nicely; besides, the taller growing one breaks up the more level surface of the dwarfer kind. *H. J. C., Grimston, Tadcaster.*

VERBENA VENOSA.

Where many of these plants are required for filling the summer beds, it is a good plan to take up a quantity of the roots and lay them in thickly in cutting-boxes, cover them with sandy soil, and place the boxes in a cold pit, into which frost cannot enter. Here, with an occasional moistening of the soil, they may be left till the middle of the month of February, and be then placed in a started vinery or other forcing-house. In a short time shoots will grow, and these may be pulled off below the soil, and dibbled into prepared boxes 3 or 4 inches apart, and kept in heat till roots form. They may be planted direct from the boxes without any further preparation, except that of hardening them off. Although the plant can be readily raised from seed, cuttings make an earlier display. *H. Markham.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Camellias.—Any of these plants which may be growing on the back walls of early vineries will be yielding quantities of flowers very acceptable at this season, when flowers in any variety are somewhat scarce. *Camellias*, either early-flowering or late, should not at any time suffer lack of moisture in the soil, although less is wanted now than at the growing season. Cool treatment should be afforded all of the plants which are intended to flower in the spring, affording them plenty of air whenever there is no danger from frost, and using but little artificial heat at any time.

Freesias.—The earliest batch of these bulbs will now be showing flower, and should be kept near the glass in the intermediate-house. Manure-water may be afforded the plants frequently. Successions should be kept growing steadily on a shelf close to the glass, or in a low pit, affording them weak manure-water when the roots have filled the pots.

Primulas.—Should the early plants be backward in showing flower, place them on a shelf near the glass in an intermediate-house. Later successions will succeed in cold pits with heat at command till the flowers appear, when removal to the greenhouse will be advisable. Do not crowd the plants, but allow each space to extend its foliage, as crowding causes weak growth, destroying the beauty of the plant. As most of the plants will have filled their pots with roots, weak manure-water at alternate applications of water will assist them. Air should be afforded freely whenever the weather makes it safe to do this.

Indian Azaleas.—In order to have some of these plants in flower at the Christmas season, select those with forward buds, and place them in the forcing-house, affording enough water to meet the requirements of the plants, but not so much as would induce a too-early growth of shoots. Let the plants be freed from Thrips and other noxious insects before placing them in the forcing-pit. Ply the syringe lightly over the foliage twice a day. The white-flowered variety, *Deutsche Perle*, is a good one for forcing at this season.

General Work in the stove consists chiefly at this season in arranging the plants in such positions as best to meet their requirements, and in avoiding overcrowding them. On dull days damp thoroughly amongst the pots, but avoid using the syringe on the plants, as the soil is then liable to receive more moisture than is good for the plants. The application of water must be carefully made, and ventilation afforded whenever the outside temperature renders it safe to do so, closing the ventilators early in the afternoon. The night temperature should range from 60° to 65°, according as the weather is frosty or mild. If pernicious insects are present on any of the inmates, at once take measures to exterminate them by sponging and syringing with an insecticide, or even with hot water at a temperature of 140°, which is excellent for scale insects of all kinds.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford, Kent.

Hardy Azaleas.—It is a matter for wonder that the hardy *Azaleas rustica*, *pontifica*, *mollis*, and the Ghent varieties, with their beautiful flowers and often their nice fragrance, should not be more extensively used for the beautifying portion of the garden in the months of May and June, and again in autumn, with their fine leaf-tints. They might be planted with other shrubs, or in beds by themselves; and the present affords a suitable time to plant. The plants being possessed of very fine roots, a mixture of peat and leaf-soil mixed with much road-grit or clean sand should be employed where the natural soil is not peaty, mixing this with the latter, or employing it alone. They will succeed, however, without the peat, providing a plentiful supply of leaf-soil is available, and the staple consists of light loam. *Azaleas* make, if they are given sufficient space, flat-headed bushes 4 to 6 feet across, therefore the plants may be set out at 3 feet asunder; although transplantation should be performed before they get spoiled.

Rhododendrons.—There is a mistaken idea, and one which prevents the *Rhododendron* finding a place in many gardens with a suitable soil, that peat is essential for healthy growth, and that without it, it is useless to attempt their cultivation. The truth is, the plants will succeed in any friable kind of soil not containing lime if leaf-mould be incorporated with it. *Rhododendrons* should have beds to themselves, apart from large-growing kinds of shrubs; and they are not injured by the shade of trees, provided it be not very dense.

Pernettya mucronata.—Berry-bearing plants have a fascination for many persons in the winter months, when flowers naturally are few; and among the many berry-bearing shrubs we possess, *Pernettyas* hold a high place. There are numerous varieties, with berries of different tints, and being of dwarf habits, they make excellent rock plants, edgings for beds of *Azaleas*, *Rhododendron*, *Kalmias*, &c., or as subjects for covering banks, and filling small beds. They require a similar kind of soil to the foregoing.

Ericas.—*Hardy Heath*s. —A collection of these plants, blooming as they do nearly the whole year, is always of interest. Being essentially peat-loving plants, they should be planted in peat, or in a friable fibrous loam, having sharp sand, grit, and leaf-mould added to it. *Ericas* grow equally well in partial shade or full sunshine, as do the Irish *Heaths*, *Dabeocia polifolia*.

General Remarks.—The birch-broom and the lawn-roller must be kept pretty frequently plied in order to maintain a smooth surface to the lawn and the walks, if the latter consist of binding gravel. If the grass continues to grow, mowing must still be practised, taking care not to mow when the grass is covered with hoar-frost. Outdoor *Chrysanthemums* will need cutting-over as they pass out of flower, those which it is desired to increase being marked with a label. The replanting of *Roses*, and any deciduous shrubs, should be hastened while the weather is open; and the mulching of creepers on walls or trellises, or other permanent subjects requiring it, should be done as time permits. Bulb-planting should be finished, or the results will be very unsatisfactory. *Anemone* tubers may be planted for a succession.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Pear-trees.—As soon as the pruning of bush-fruits is finished, that of the wall-Pears may begin, and be followed by nailing or tying, all the work of this nature being done wherever possible before the advent of hard weather. Assuming the young growths were summer-pruned, these will now require to be cut back to within an inch of their base; and most of the spurs which have got far from the wall should be cut back to a bud, or removed entirely where they can be sacrificed. Some varieties naturally fruit on long spurs, notably *Marie Louise*, and this peculiarity must be borne in mind in pruning. Three inches from the wall is far enough for others, at that distance the flowers and fruit are afforded protection against frost. In the case of the long-spurred varieties, boards, either with or without netting, should be fixed under the coping as a kind of protection against frost and hail. When the *Pear* is fan-trained, all terminal shoots, if not more than 12 inches long, should be laid in unshortened, except the terminal bud, which

should be nipped out; for if it be a bloom-bud, as is usually the case, onward growth is arrested for a year if it be left. Fine tarred-twine forms the best material for securing the main branches of a *Pear-tree*, and where the walls are not wired, nails or round-headed studs should be driven into the wall, and the branches fastened to these. It is very necessary in the case of the *Pear* to remove most of the fastenings annually.

The Pruning of Espalier Trees should be carried out on the same principles. These trees being less tall than trees on walls, are less easily balanced as regards the distribution of sap, with the consequence that the upper tiers of branches become the strongest after a few years, and for this reason old trees are usually unsightly, although good fruits are borne on the more robust branches. Something may be done in summer by checking the growth of laterals on the upper branches, and in keeping the spurs thin, at the same time allowing growth to a fuller extent to be made on the lower ones. Root-pruning, in some cases of great vigour, aids in restoring a balance between the upper and lower tiers. The old plan of supporting these trees on wooden stakes has almost disappeared, stout iron-wire trellises having taken their place.

Pyramids and Bush-trees.—In most kitchen-gardens these must be restricted to 8 or 10 feet in height, in order that little shading of the vegetable crops ensue, it being only in very large gardens that full-sized standard trees can be grown. As much pruning leads to unproductiveness, a better method is to let the leading branches grow unpruned for two or three years, merely thinning out the weakest growths and those in the centre. By doing this, heavy crops of fruit are obtained, but the fruits are smaller than what can be obtained from trees moderately pruned.

Root-pruning.—If the space is too limited for this kind of extension of growth, the better alternative is to root-prune, which will tend to induce the formation of new fruit-spurs, and reduce too great luxuriance. The trees which are making the strongest growth may be lifted entirely, and weaker ones have half of the roots lifted in one year, and the other half the next year. To do this readily a trench should be taken out at the extremities of the roots as deep as the lowest roots, and 2 feet wide, then the soil should be removed by a fork until the roots are cleared, then these should be tied together and fastened to a stake, whilst the work is carried further. Roots that strike downwards may be cut off, after digging a portion of them out of the soil, all jagged ends being made smooth, so that roots may start from a healthy callus. When filling in the soil, the roots should be kept in their natural positions by laying down horizontally the lowest first, then, after covering these with soil and making it firm, another layer of roots should follow, and so on till all are replaced. If the soil is wet, or is of a kind liable to run together, some charred soil or refuse should be mixed with it, and instead of treading, it should be pressed with the spade and left to settle. A mulch of half-decayed manure may be put over the roots. Trees in exposed positions will need securing against wind-waving, which is best done by fixing a piece of india-rubber hose-pipe around the stem, at two-thirds of the height, and fastening three galvanised guy-wires triangular-wise around it, securing these to 3-foot stakes, driven 2 feet into the soil.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence Bart., Burford, Dorset.

Uncommon Hothouse Species.—Most Orchid collections contain representatives of the species and hybrids of *Cattleya*, *Odontoglossum*, *Dendrobium*, *Cypripedium*, *Calanthe*, *Cologyne*, *Phalaenopsis*, *Mittonia*, *Sophranites*, &c., that produce showy flowers. But there are numbers of other species which are very pretty, and singularly attractive. Few plants excite so much interest as the feather-like lip of the *Bulbophyllum barbigerrum*, or the extraordinary sensitive labellum of *Madevallia muscosa*, which upon the slightest touch suddenly closes itself upwards to the column, where it remains for some little time before ascending again to its proper position. Very singular too, is the movable lip of such plants as *Bulbophyllum Lobbi*, *B. Dearei*, *B. siamense*, and *B. Sillemianum*. The labellum in these cases is so constructed, that following very slight motion, it is thrown backward and forward as though it were set upon a hinge. There are other *Bulbophyllums* of equal merit, as *B. grandiflorum*, *B. Sanderianum*, *B. longisepalum*, *B. comosum*, *B. umbellatum*, *B. may*

dibulare, B. tremulum, B. nigropetalum, B. Ericsoni, B. racemosum, B. Dayanum, &c. There are many varieties among the Cirrhopetalums which are not only curious, but handsome in appearance. Such is the umbrella-like spread of the brown satiny sepals of C. Mastersianum, C. ornatissimum, the distinct C. Rothschildianum, C. Colletti, C. O'Brienianum, C. Thouarsii, C. robustum, C. guttatum, C. appendiculatum, C. fimbriatum, C. setiferum, C. Cummingi, with flowers arranged like tiny pink parasols, and, when stood upon the ground each flower looks as if a caterpillar were curled over its surface. A compact plant of C. nutans, smothered with umbels of small white flowers, makes a charming object. C. refractum is also a great curiosity, as whenever the plant is handled, the flowers move about in wind-mill-like fashion. C. Medusæ always attracts attention, the aspect presented by the dense cluster of numerous flowers, and the lateral sepals being so much lengthened as to give the spike the appearance of a head with very long dishevelled hair. Eria disciflora, with its movable tongue-like lip, is another extraordinary species. Eria anchorites is very appropriately named, from the anchor-like resemblance upon the lip. The strong-growing Megacalinium triste produces an erect spike, the rhachis at its apex having the appearance of a snake in the act of striking, on each side of which are borne small blackish flowers in alternate pairs. M. leucorachis is also a peculiar and interesting species. All the above plants will thrive if suspended close to the roof-glass in the warmest house or ordinary plant-stove; but if any plant shows signs of ill-health, remove it to the intermediate-house. Keep the plants always on the shady side of the house, as they resent direct sunshine, but love light. They should be planted in teakwood-baskets or shallow pans, filled to about three-fourths of their depth with clean crocks or charcoal. The advantage of charcoal over crocks consists in its lightness. Place a layer of moss over the drainage, and then put in the plant, filling up to the rhizome of each plant with good fibrous peat and a little sphagnum-moss. Take care to use a reasonable quantity of small crocks with the material, as the plants when in full growth require an almost unlimited supply of water. Plants of Bulbophyllum and Cirrhopetalum, &c., are never all ready for re-basking at one time, but each should be attended to when new growths have commenced to push. Following root-disturbance, the plants must be very sparingly watered until they have made some new roots.

Cool-house Species.—One of the most interesting of cool-growing species is Polycynis Lehmanni, which produces sprays of very remarkable and pretty flowers. The same remarks are applicable to the rare Sievekingia Reichenbachiana; they should be suspended to the roof in shallow pans, in a rather good intermediate temperature. The new Trevorla Chloris also appears to thrive well in a similar position. Pleurothallis macroblepharis is a small-growing Orchid, but the singular beauty and curious structure of the flower, which have a resemblance to some species of gnat, are extremely interesting. P. ornatus is a dwarf-growing species; its dusky flowers are covered with dark-purple spots on the surface, and oscillating white hairs on the margin of the segments. Pleurothallis grows well under ordinary cool-house treatment; also such curious species as Octomeria, Restrepia, Stelis, Sigmatostalix radicans, Phrysosiphon, Sarcophilus, Promenæ, Diurus, &c.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Carrot Forcing.—A hot-bed constructed for the forcing of Carrots should be made of such material as will maintain a steady heat of 75° to 80° for a long period, namely Beech, Oak, or Chestnut-leaves. If the hot-bed be made on the surface of the ground, litter must be used on the outside, or it will fall to pieces; but if made in a hole or a brick-pit, leaves only should be employed. The depth in any case must not be less than 3 feet, and if frames are to be used, the bed should measure 3 feet more in width and length than the combined frames. The Carrot, to be of the best quality, should not be hurried by bottom or top-heat; consequently the heat employed must be moderate, namely, 55° to 58° at night, 65° to 70° by day, and a bottom-heat not exceeding 80° in the bed of leaves, which will afford about 70° to 75° in the bed of soil. The latter should consist of sifted friable, light loamy soil, mixed with sifted decayed manure and leaf-mould; and it should be

about 1 foot in depth, and be brought to within 9 inches of the glass, and made firm by patting each 3-inch layer with a spade as it is being put into the bed. As a frequent application of water does harm to this crop, the materials should be fairly moist. The best varieties for forcing are Early Carentan (which may be sown thickly), Early Nantes, and French Horn. Sow the seed thinly, either in shallow drills or broadcast, and just cover them with finely-sifted soil. Hot-beds should be made up every third week, and sowings made till about the end of March.

Summer and Autumn-sown Carrots.—Carrots growing in the open ground and in cold frames are easily hurt by exposure to frost, therefore sufficient protection should be afforded. If part of the main crop is still in the ground, the roots should be lifted without further delay.

Turnips.—Let the principal part of this crop be stored in a frost-proof shed or in pits out-of-doors, cutting off the tops to within half-an-inch of the bulb, and leaving the root intact. Some of the bulbs may be left in the ground for daily use so long as the weather keeps open.

Mint.—About this date some strong roots may be lifted and planted in boxes or in beds of soil in warm pits, using a light porous soil to cover them. Mint requires a moist air, and a temperature of 60°.

Tarragon.—This herb is in some families in constant request; and roots should be lifted and boxed or potted in leaf-soil, and placed in a temperature of 50°.

Chicory.—A portion of the crop of roots may now be lifted, the tops cut off just above the crown, and be packed closely in deep boxes or Seakale-pots in rather damp soil of a light nature in the Mushroom-house, or a warm cellar to blanch.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Strawberries.—If it be intended to have ripe fruit in March next, some plants must now be taken indoors, and be subjected to slow forcing. If a house can be set apart for this purpose, let it be thoroughly cleansed beforehand by washing the woodwork and glass, and lime-washing the walls. Strawberries may be forced very well in houses with other plants, providing they be given light, airy positions near the glass, and a temperature of from 50° at night, 55° in the day, with a rise of 10° to 15° from sun-heat may be permitted. The atmosphere must be kept sweet by affording ventilation whenever practicable. Syringe the plants once on fine days, and at other times damp the paths and other surfaces in the house. Never permit the plants to become quite dry at the roots. The plants may be started into growth in a pit if necessary, placing the pots upon a bed of leaves. The hot weather experienced some time ago was conducive to insect pests, and before taking the plants indoors it will be well to lay them on their sides in rows on mats, and to syringe them freely with clean water, directing it well to the underside of the leaves. To check mildew, immerse each plant in a pail of water, into which has been mixed one half-pint of flowers-of-sulphur. Good varieties of Strawberries for early forcing are La Grosse Sucrée, Vicomtesse Héricart du Thury, and Royal Sovereign.

Peach-houses.—The trees in the early-house that were put in order for a start, if they are to afford ripe fruit in the month of May, should have the forcing begun very gently at the first, merely the ventilators being closed, so as to maintain a temperature of 45° at night, and 50° by day, in dull weather, with a rise of 5° with sun-heat, and so long as these temperatures are reached no artificial heat is required. The houses should be aired in the forenoon, and closed early in the afternoon. The trees should be syringed on fine days at closing time. Let an examination of the border be made forthwith, and if the soil is lacking in moisture a thorough application of water should be made. Let this kind of treatment be continued until the bloom-buds become prominent, then raise the temperature a few degrees.

The other Peacheries.—If new borders are being contemplated, or the exhausted top-soil replaced with new, and any planting of trees has to be done, let these jobs be finished as soon as possible. All pruning and tying, insect dressing, and cleansing of houses should be finished by the end of the year. Remember that only thorough cleanliness is of any effect in the battle with insect foes. If mealy-bug is the worst of these let the trees, woodwork, and hot-water pipes

be cleaned with strong suds, or use Gishurst's soap on the trees at the advised rates. Lime-wash the walls once or twice, and take away the upper crust of soil, replacing it with that which is new and sweet. Keep the house as cool as possible.

Peach and Nectarine Trees in Pots.—These trees are the better for being out of doors at this date. But the time is close at hand when they must be brought under glass or otherwise sheltered. In the south, a sheltered position out of doors, on a coal-ash floor, where water does not stay, with coalashes round about the pots, and to the depth of a few inches up the stem, make the trees safe for the winter.

Orchard-house Trees and Pot Vines for late Use.—These should be wintered out of doors similarly.

Late Pot Vines.—The canes may now be cut back to the lowest best bud, and this being done forthwith no bleeding will take place.

THE APIARY.

By EXPERT.

Starving Bees.—During the month of November the weather is generally so uncertain and treacherous that it is impossible at times to examine hives with anything like thoroughness; not only so, but if colonies are weak, or are located in large, cold hives, exposed to all the winds that blow, they cannot be induced to take syrup in such quantities as we wish, and sometimes the bees will die of hunger, while the feeder full of syrup is on the hive. In desperate cases of foodless hives at this late time of the year, the best course is to take out three or four of the empty frames and pour a good quantity of warm syrup into each, first on one side, and then on the other. Replace the combs in the hives towards evening, and after closing the entrance, remove it indoors. If it is kept in a warm room, the bees will feed, re-arrange themselves in proximity to the newly-supplied stores, and tidy up the wet combs before morning, when the hive may be returned to its stand. A good-sized cake of well-made soft candy—not the kind which becomes as hard as stone after a few days' exposure—weighing 4 lb. or 5 lb., will make safe a stock ill-provided with stored combs, and wherever there is scarcity, should be at once supplied. The cake, if moulded in a large saucer or soup-plate, in which a sheet of strong paper is laid before pouring on the candy, may be laid on the frames over the cluster of bees. Of course, the ordinary quilts may not be over the candy, so a rough, warm covering must be improvised. When all necessary work has been attended to, the less the bees are disturbed, the better; but in giving the final look round, it is well to remember that storms may be expected this month, and precautions are needed in view of hives being blown over—a good stock may be easily ruined by an accident of this kind. The general tidying up, so necessary about an apiary at this time of the year, will, of course be left to the taste of the bee-keeper; some will be content to leave all sorts of odds and ends which have been in use during the summer lying about for months until the opening of the New Year arouses them into activity again. We need scarcely say that the appearance of a neglected apiary in winter is wretched in the extreme, and will be but a sorry inducement to an intending bee-keeper to make a start in apiculture; while a few hives of bees well cared for and snugly housed, with all their surroundings in trim condition, is a very pleasant sight to see. We therefore urge one and all to set about it. When the hives themselves are completely put in order, clear away all rubbish, weeds, and everything that would give an appearance of neglect. See to the legs of hives. Any that are decayed or beginning to rot at the bottom must be repaired; a piece of slate under each leg is a good preservative, as it does not retain moisture. All old or useless combs should be melted down before the moth gets at them, while sections and frames containing combs intended for use next year must be carefully propped up and kept in a dry place as a protection from the same pest. Unsold honey left on hand, should be attended to without delay—that in sections will rapidly crystallise and become unsaleable if left in a cold damp place; while, if carefully wrapped up and stowed away in a warm dry cupboard, the sections will often be found in fine condition for the table the following spring. We are obliged to qualify this assertion, because sometimes the honey in comb will crystallise in spite of every precaution, in which cases the only resource is to melt the comb and honey, and skim off the wax while hot. Extracted honey only requires to be protected from the air and kept in a dry place, when it will keep good for years.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 28	{ National Chrysanthemum Society: General Committee Meet.
SALES.		
MONDAY,	Nov. 28	{ Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Nov. 29	{ Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	Nov. 30	{ Dutch Bulbs, Japanese Lilies, Tuberose, &c., at Protheroe & Morris' Rooms.
THURSDAY,	DEC. 1	{ Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	DEC. 2	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—41.3°.

ACTUAL TEMPERATURES:—

LONDON.—November 23 (6 P.M.): Max., 43°; Min., 33°.

PROVINCES.—November 23 (6 P.M.): Max., 46°, Exeter; Min., 35°, York.

Rules for
Judging.

If it be a cause for congratulation to the Royal Horticultural Society that its excellent cotagers and allotment holders' fruit pamphlet has been issued to the extent of ninety thousand, although not remunerative because it is so cheap, it is hardly less so that its first edition of some two thousand copies of the *Rules for Judging* pamphlet should have been sold out, and a fresh one be in preparation. The latter fact, although dealing with a much lesser number, still shows the esteem and regard in which the society is held in the United Kingdom.

Very recently the members of the committee who devoted so much time and thought so satisfactorily to the preparation of the original issue were called together to enable them to offer suggestions or amendments for a new issue, and also to consider suggestions from other sources. That after very patient consideration it should have been found needful to make very few alterations or additions shows how well the work was done in the first place. The chief addition, when the new pamphlet is published, will be found in an appendix devoted to the interesting subject of point judging. This matter, so long understood and practised by some, so novel and difficult to follow with

others, has been made clear in the appendix. So also has the more technical subject of "point values" in relation to prizes. Every good judge knows that in dealing with exhibits of considerable number, whether plants, flowers, fruits, or vegetables, that when exhibits run each other closely in point of merit, there is no other course open to enable an exact or correct decision to be arrived at, but by giving to every item in such exhibit a certain numerical value, and thus arrive at the total for the whole collection. That being so, one object of the reference to this matter in the new pamphlet is to induce all executive officials of a society to make use of it, and all judges to readily adopt it. If, still further, the scales of points for the best things shown, published in the pamphlet, be adopted, then something like uniform method comes universally into use.

But whilst pointing and the present common system of offering a certain number of fixed sums as prizes work harmoniously, the method, all the same, has very largely served to show the grave injustice done to exhibits that frequently run each other so close that only very small point values differentiate them. Thus, if one collection gets 60 points and a prize of £3, whilst the second is but one point less, but gets only £2, it is so very obvious that there is no equity in the original division, and that the collections should have awarded to them sums only slightly differing in amount. It is for this reason, in one case, and also because in some very notable cases alone, the practice of awarding prizes in money according to the points awarded, to or earned by each collection has already been adopted with so much success and satisfaction, that the subject of point values in prize-giving has been included in the new issue of rules for judging, and it may well attract the widest possible consideration.

Naturally, the old or arbitrary method of prize-money allocation has its admirers, and it is an excellent method for those who usually take 1st prizes. But whilst this class of exhibitors obtained so large a share of the cash, the lower competitors who run him so closely get much less than their due. Another matter which largely occupied the attention of the committee, was that already dealt with in certain sections. It is that of the difficult and painful act of disqualifying any competitor. It is felt that so invidious a duty should not be placed on the judges until the executive of a show or its representative has been consulted. It is too frequently assumed that disqualification results through fraudulent acts, but these are, after all, exceptionally rare. The majority of disqualifications results from some quite innocent or unintentional error on the part of the exhibitor, and when, in such case, he gets the slur publicly paraded of disqualification, not only does he suffer heavy pecuniary loss, but he suffers even more mentally. The punishment is cruel, and far beyond the needs of the case. Sometimes the exhibitor is the victim of another's error, or of some one's carelessness or wrong-doing. In any case, serious attention has been given to the matter by the committee, and it is hoped that the efforts made through the amended clauses in the pamphlet will secure universal approval. Some men perhaps like to show their little brief authority, and disqualify an innocent exhibitor with glee. It is hoped these are indeed few. In any case, additional effort has been made to tone down the harshness occasionally seen in these disqualifications.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, December 1, 1898, at 8 P.M., the following papers will be read:—1, "On the Biology of *Agaricus velutipes*, Curt.," by Mr. H. BIFFEN; 2, "On the Gastric Glands of the *Marsupialia*," by Mr. JAS. JOHNSTONE.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Secretary writes: "Mr. F. G. TRESEDER, Chairman of the Cardiff Chrysanthemum Society, has forwarded a cheque for £5 15s., being the amount realised at a stall held at the recent Chrysanthemum exhibition at Cardiff in aid of the above Institution."

NATIONAL DAHLIA SOCIETY.—Mr. J. F. HUDSON, Hon. Sec., desires us to announce that the annual meeting of the National Dahlia Society will be held, by kind permission of the Horticultural Club, in their rooms, at the Hotel Windsor, Victoria Street, S.W., on Tuesday, December 13, 1898, at 2 P.M.

PARIS CHRYSANTHEMUM EXHIBITION.—At the late meeting in the Tuileries garden, MM. VILMORIN ANDRIEUX ET CIE. received the grand prize of honour for their Chrysanthemums; and at the same time their foreman-cultivator, M. KRATZ, was made a Chevalier of the "Méríte Agricole."

MÉRITE AGRICOLE.—Among recent promotions in this order we may mention the promotion to the grade of officers of MM. CHARLES BALTET, LOUIS DALLÉ, and H. E. MARTINET, of the *Jardin*. M. DAUTHENAY, of the *Revue Horticole*, has been appointed Chevalier of the Order.

INFLUENCE OF HEAT IN DETERMINING THE SEX OF PLANTS.—M. MARIN MOLLIARD contributes to the *Comptes Rendus* of the Academy of Science for October 31, a paper on the "influence of temperature in the determination of sex," detailing experiments conducted principally with *Mercurialis annua* cultivated under varying conditions. Briefly, his conclusions are that, in *Mercurialis*, heat [as in the Vegetable-Marrow] favours the production of female plants. The action of the heat exerts an influence upon the seeds in which it is to be supposed that the sex is definitely formed, and subsequently favours the germination of female seeds; or it even may act further in determining the sex when the seed is formed. The author adopts the second theory which alone explains the modifications of sex previously detailed in the case of Hemp.

JADOO.—We are informed that no fewer than sixteen prizes have been awarded to this substance at the recent Philadelphia Exhibition. Other prizes were obtained in the same week at Bordeaux and Birmingham.

PHIPPS' CONSERVATORIES, SCHENLEY PARK.—These conservatories in Pittsburgh, Pa., are the gift of Mr. HENRY PHIPPS, and form a handsome range of houses, well stocked with choice plants. They are open at all reasonable hours to the public, who show their appreciation by coming "in hundreds and thousands, men, women, and children . . . and they never touch or pluck the flowers or plants. Last Easter Sunday 30,000 persons passed through the conservatories, and thousands came who could not get in." The plants exhibited are of many varieties, tropical, economic, and decorative; at certain seasons special floral displays (of Roses, Chrysanthemums, and so on) are arranged. The munificent gift has proved a real boon, and is maintained in a condition worthy of its value.

"FRUIT-CULTURE FOR AMATEURS."—By S. T. WRIGHT, Superintendent of the Royal Horticultural Gardens, Chiswick. (London: L. UPICOTT GILL, 170, Strand, W.C.) This handbook contains an appendix on "Insect and other Pests Injurious to Fruit Trees," by W. D. DRURY; and also many illustrations. The fact that it is the second edition which lies before us is itself a guarantee of the value of the book, and of the appreciation with which it has met. It is clearly written and reliable, while the small price and handy size commend it to many in preference to larger and more costly works.

WORKERS IN HORTICULTURE.—Mr. A. PINOTEAU has been created a Chevalier of the Ordre du Mérite Agricole for his services to horticulture, the honour coming to him upon the recommendation of the Minister of Agriculture of the Republic of France. It is the first time in history that this decoration has been bestowed upon a Frenchman whose work has been accomplished out of France, for Mr. PINOTEAU, says our Chicago contemporary, *Gardening*, is Superintendent of Logan Park, Montreal, Canada. His nativity was at Villeneuve-sur-Cher, France, in 1855. He pursued a course in the College d'Horticulture of the Department of the Berri, and came to Montreal in 1874. From 1882 to 1889 he was a member of the staff of Mount Royal Park. In the latter year he was appointed to his present position, where he has charge of the growing of plants for the twenty-six public squares of the city. He is doing that which makes the French order a well-merited tribute to his attainments, and this year provided nearly a half-million plants for the city squares. Mr. PINOTEAU is a member of the Montreal Horticultural Society, and of the Montreal Florists' and Gardeners' Club, and at all times has shown himself an enthusiast in the advancement of the art of the culture of flowers.

PARSNIPS.—A correspondent sends us a bunch of Parsnips which have made their way through a hole in the discarded sole of a boot, which happened to be in their way. The seeds had been sown very thickly, so that the roots are bunched together. It would appear as if the seedlings had sent down their radicles through a minute hole in the leather. It is of course possible that the radicles exuded a solvent fluid which dissolved or softened the leather, and so allowed them to pass through. This is what happens when Twitch perforates Potato-tubers. It is noteworthy that the roots in question became swollen, not above the point of constriction, as happens when a tie is allowed to remain too long on a branch, but below it. The thick roots act as reservoirs or store places for nutritive matters, and as the leaves and crown make great demands upon these stores, the current of nutritive fluid must in this case be upwards. This is obvious from the necessities of the case, and it is illustrated by the position of the swelling.

"BOLETIM DA SOCIEDADE BROTERIANA."—The fifteenth volume of this valuable publication, edited by Professor HENRIQUES, of Coimbra, is now in course of publication. The parts before us contain a biographical notice of the late JULIUS SACHS, an important paper on "Portuguese Monocotyledons," by Señor CONTINTO; a memoir on the "Phenology of Coimbra," by Dr. IHNE. The publication is issued in sheets, protected, or unprotected, by a very thin wrapper, which does not improve by laying on one's table with other periodicals.

"THE STORY OF THE FARM."—Such is the title of a small book by Mr. JAMES LONG (Rural World Publishing Co., London), containing various essays on Agricultural Economy. The object of the pages is "to call attention to certain cardinal features in connection with our agricultural system which demand the urgent attention alike of farmer, landowner, and parliamentarian." Hence we find chapters devoted to such subjects as: The land and its owners, the farmer's position, the labourer and his hire, aids to the future prosperity of agriculture, tenant-right, peasant landowners, farming of the future, woman in relation to rural industries, and the question "Can the British Empire feed its people?" The views expressed are on the whole optimistic, as though "we cannot, under present circumstances, produce all we require (independently of over-sea productions), but with fairer conditions we can produce a great deal more, and with the new life which such conditions will impart, we shall not only be able to defy an enemy—whom God forbid may never appear—but return to that course of prosperity which is the happiness and glory of a nation." The book is dedicated to the Countess of WARWICK, who has contributed an introduction to it on "Women and the future of Agriculture."

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner of the members of this Society will be held on Wednesday next, November 30, at the Holborn Restaurant, at 6.30 P.M. The chair will be taken by Sir A. K. ROLLIT, M.P.; and the attendance of ladies is requested.

A PEAR-TREE BEARING TWO CROPS.—The very rare occurrence of a Pear-tree ripening two crops in one season has taken place this year in the garden of Mr. A. M. BEST, Headstone Villas, Harrow. At the usual season a tree of Williams' Bon Chrétien set a large number of fruits, many of which, in consequence of the hot, dry season, fell in an immature state. In September, however, a light crop of good fruits ripened, and at the same time the tree was again, in flower, and bearing a quantity of small fruits in various stages of growth. Some of these grew to about one-half or three-fourths of the size of the fruits of the first crop, and have since ripened. They are as good as the fruits of the first crop in every respect except size.

THE BALDWIN APPLE.—The issue of *Gardening* [United States] for November 1 has an illustration of a stone pillar commemorative of the discovery of the Baldwin Apple. The inscription runs as follows:—

THIS PILLAR,
ERECTED IN 1895
BY THE
RUMFORD HISTORICAL
ASSOCIATION,
INCORPORATED APRIL 28,
1877,
MARKS THE ESTATE
WHERE, IN 1793,
SAML. THOMPSON, Esq.,
WHILE LOCATING THE
LINE OF THE
MIDDLESEX CANAL,
DISCOVERED THE FIRST
PECKER APPLE-TREE,
LATER NAMED THE
BALDWIN.

PUBLICATIONS RECEIVED.—*Journal of the Board of Agriculture*, September, including papers on English Orchards, Imports of the Cereal Year, Essential Qualities of good Cider, Agricultural Returns of Great Britain, 1898; Aphides, the Pear-Midge, and similar subjects. — *Bulletin of the Botanical Department, Jamaica*, September, contains: Agriculture of the Sugar-Cane, III.; Banana-Meal, Jamaica Satin-Wood, &c.—*Queensland Agricultural Journal*, October, 1898. With articles on the following subjects: Queensland Agricultural College, Training at Agricultural Colleges, Potato Culture, Tobacco, Indigenous "Rubber" Plant (*Excocaria Dallachyana*), Scent-yielding Plants, Roses on Barren Soil, and Notes for the Month.—*Botanisches Centralblatt*, general register, über, Bant I. bis. LX, Heft 3.

PLANT PORTRAITS.

APPLE, PITMASTON PINE-APPLE, *Bulletin d'Arboriculture*, &c.
CATTLEA MARONI, *Gard. Mag.*, November 5.
DARWIN TULIPS: 1, Marguerite; 2, the black Tulip; 3, Whistler; 4, Edouard André, *Revue Horticole*, November 16.
EXOCHORDA GRANDIFLORA, Lindley, *Garten Flora*, 1898, t. 1455.
GEUM COCCINEUM, *Revue de l'Horticulture Belge*, November.
GLADIOLUS COLVILLEI ALBA, *Bull. Soc. Hort. Toscana*, t. 7, October, 1898.
GRAPE, CONSEILLER DE POORTER, *Bulletin d'Arboriculture*, &c., October.—A black Grape, the result of a cross between Black Hambro and Madeleine Royale. Three weeks earlier than the former.
HIBISCUS CISPLATINUS, a spiny-stemmed species with three pointed lobes to the leaf, and large rose-pink flowers. A native of Uruguay, introduced by M. E. André, *Revue Horticole*, October 16.
HYDRANGEA HORTENSIS VAR. MARIESI, *Garden*, November 12.
LATHYRUS PUBESCENS, *Garden*, October 29; fl. blue.
MIMULUS CARDINALIS, *Mechans' Monthly*, November.
NECTARINE, HUNT'S TAWNY, *Bulletin d'Arboriculture*, &c., September.
PACHYSTOMA THOMSONIANUM VAR. PUNCTULATA, *Revue Horticole*, November 1.
PAPHIOPEDIM ROTHSCILDIANUM, *Revue de l'Horticulture Belge*, October.
PASSION-FLOWER, CONSTANCE ELLIOTT, *Revue de l'Horticulture Belge*, November.
PEAR DOYENNÉ DE JUILLET, *Le Moniteur d'Horticulture*, November 10.

RHODODENDRON MINNA, *Garten Welt*, iii.
RHODODENDRON VASEYI, *Garden*, October 6.
RHODODENDRON VASEYI, *Garden*, October 8.
ROSE EMPRESS AUGUSTA VICTORIA, H.T., *Revue de l'Horticulture Belge*, September. Flowers orange-white, passing to yellow; sent out by Lambert & Reiter.
ROSE PAPA LAMBERT, H. P. Rose, coloured, a cross between White Lady and Marie Baumann, raised by Lambert, Treves, *Moniteur d'Horticulture*.
ZANTEDESCHIA PENTLANDI, Watson, in *Gardeners' Chronicle*, 1892, p. 123.—The yellow spathed Aroid, better known under the name of Richardia, *Garten Flora*, t. 1456.

DR. HAMILTON RAMSAY'S GARDEN, TORQUAY.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THIS Devonshire garden, a view in which is given in our present issue, is rich in plants, such as we in more northerly and less genial climes associate with the greenhouse and other plant structures. Our correspondent in that part of the country, Mr. W. Swan, visited the place on the occasion of a garden-party being given therein in aid of the Torquay Sick Gardeners' Relief Fund, usually connected with a Rose-show held in the Devon Rosary Grounds, but which this year had to be abandoned.

Dr. Hamilton Ramsay happily suggested a garden-party in its place, so that the fund should not suffer. The Doctor placed a good portion of his residence and charming grounds at the disposal of the committee, and here the garden-party was held in the afternoon. The party was conducted by the Doctor himself, who led the way through the house and all over the grounds, and pointed out the many objects of interest in the rare exotic plants naturalised in the open air. These experiments have been attended with remarkable success. A rare plant, growing in a sheltered nook, and fastened to wires on the wall, was *Sophora chinensis*, then bearing a crop of seed-pods; and near this a large plant of a scarlet-flowered *Abutilon* in abundant flower; a grand *Maréchal Niel* on the house, vigorous and uncanceled, which was worked on the China or Monthly Rose; Palms, *Dracenas*, *Phormiums*, *Benthamia fragifera*, with ripe fruits still on it; *Colletia horrida*, a very fine specimen; *Spiraea Lindleyana*, *Plumbago capensis*, and a *Heliotrope* twenty-six years old, both of these finely in flower; *Aralia Sieboldi*, one of the biggest in the country, in magnificent bloom; *Solanum jasminoides*, greenhouse varieties of *Fuchsia* growing in the open, 14 feet in height, and attached to a wall; *Choisya ternata* coming freely into flower, a fine specimen of the Loquat in bud, various *Cliveas*, *Corypha australis*, *Chamarops Fortunei*, with abundant fruits, and young self-sown plants coming up under them. *Cannas* do splendidly here, and especially *C. Ehemanni*, a crimson-flowered variety, introduced about eighteen years ago.

Dr. Ramsay has been a keen gardener all his life, and is now nearly seventy-four years of age. Quite recently he received a presentation from the Torquay Gardeners' Association, which has given him great gratification.

He filled the high office of Purse-bearer to the Lord High Commissioner to the General Assembly of the Church of Scotland, an appointment which he held under twelve Commissioners for the long period of thirty-nine years. On his retirement he received an address, a silver loving-cup of antique plate, and a purse of sovereigns, as a testimonial from the members of the Assembly, which included some of the most eminent men in Scotland.

FLORISTS' FLOWERS.

SOME NEW WHITE VARIETIES OF CHRYSANTHEMUMS.

SOME of the recent novelties, both of continental and home production, are varieties of different shades of white that really seem to merit a few words of special commendation. Many of the best are from the well-known raiser, M. Calvat, whose Madame Carnot is probably the finest Japanese Chrysanthemum in the world [it has recently been dethroned by the Société Nationale d'Horticulture].

ture. Ed.], and whose other whites, such as Madame Gustave Henry, Souvenir de petite Amie, Mdle. Thérèse Rey, Baronne Ad. de Rothschild, Madame Ad. Chatin, Ma Perfection, Mdle. M. A. de Galbert, are already well known. One of the finest additions this season is Miss Mary Leschelles, a pure white sport from Reine d'Angleterre, similar to its parent in form, but owing to the purity of its tint, far superior. Madame Madeleine Expulson is another; Madame G. Bruant is very large, usually white, but often faintly streaked with rose; Mdle. Lucie Faure is of fine incurved form, large in size, and very solid; so, too, is Madame Ferlat. Antoinette has been seen in very good form, but is not new.

M. Louis Rémy, the white sport from Mrs. C. Harman Payne, is very large, and is highly thought of by some, but the English sport, Lady Ellen Clark, from the same parent, is in all probability identical. Nellie Pockett, a new colonial white, is large, and a well-built flower; Lady Crawshaw is large, deeply built, and the colour creamy-white, slightly tinted. One of the most promising is undoubtedly Jane Molyneux, it is of great size, has long drooping florets forming a noble flower, and the colour is white, but rather creamy in tone. C. H. P.

NOTICES OF BOOKS.

DANTE'S GARDEN, WITH LEGENDS OF THE FLOWERS. By Rosemary A. Cotes. (Methuen & Co., 36, Essex Street, Strand, W.C.)

The outside of this small volume suggests that Dante could have had but a little garden, while the inside unfortunately shows that the compiler was but little acquainted with the horticultural portion of her subject. Some twenty-four names of plants are included in the table of contents, and these are treated of in separate chapters, where their presence is accounted for by more or less apposite quotations from the poet. The inclusion of legends, which possibly were familiar to Dante, will be novel and interesting to many readers, although the author sadly confuses the plants to which they refer. Thus, we are assured that "the flowering Rush, known by the name of Acis, is the dwarf species of Amaryllid; . . . from the blood of Acis arose the first flowering Reed."

Again, the white and fragrantly-flowered Philadelphus is decidedly not "dedicated to the Reed-nymph Syrinx, after whom, as a hollow-stemmed plant, it was named when she [Syrinx] was changed into a Reed, from which Pan made his pipes."

The English translations are taken from Cary's *Vision of Dante*. We recommend the compiler to avail herself of the friendly aid of some competent botanist before she publishes any more extracts or theories, and thus avoid the rather serious errors and anachronisms into which she has fallen.

THE FARMER AND THE BIRDS. By Edith Carrington. With preface by Canon Tristram, F.R.S. (London, George Bell & Sons.)

As regards the scope of this book, we cannot do better than quote from the author's introduction—"The theory of the compiler, in a nutshell, is this: that while the over-multiplication of certain birds may be dreaded, the presence of all, in moderation, is useful; and that where over-multiplication has taken place, it is wiser to use natural rather than artificial remedies." This is no doubt the case; the difficulty being to first learn, and then to prove to others what constitutes a surplus population of birds, and how, living as civilised men must do, an existence largely artificial, it is consistent to restore the perfect balance of nature, and yet maintain supremacy over other creatures. As regards birds which form the subject of Miss Carrington's book, it is impossible not to sympathise with her in her feelings concerning them. For this contains no attempts at fine writing, no high-flown descriptions of beautiful feathers and songs, but consists chiefly of verified statistics linked together with remarks so temperate that none could object to them. It is a common-sense

appeal to the pockets, and not to the poetical feelings of the farmer. Of course, all the arguments are one-sided, that is to say, written in defence of birds, but there is no attempt made to contradict or gloss over opposition truths. Certainly some birds do damage, but to a small extent when compared with their kindly deeds in destroying noxious insects. All classes of feathered creatures are defended; swallows overhead, cuckoos, nightingales, and summer workers below; workers all the year (robins, buntings, finches, thrushes, and so on), and slandered workers such as sparrow-hawks, owls, kestrels, and doves. Even the hunted house-sparrow finds an advocate, the author declaring that his tribe, at least in the country, do more good than harm.

The book is well arranged, and should be widely distributed and read. Miss Carrington's appendix on the law about birds, also deserves mention and perusal. Would that any laws could restore species exterminated by so-called sportsmen.

BULLETIN OF THE FRENCH HORTICULTURAL SOCIETY OF LONDON.

THIS annual publication, the ninth of its kind, has recently come to hand, and is, indeed, strong evidence of the continued prosperity of a society that has of late years met with much success. Unlike many other horticultural societies, the one presided over by Mr. George Schneider, does not depend upon flower-shows for its support, but in a large measure upon the *esprit de corps* of its many members at home and abroad for its maintenance, and for the carrying out of its objects, which are now well known, and have often been alluded to in the organs of the English gardening press.

The present issue is a great improvement on some of the earlier ones, and contains 142 pages of printed matter, comprising, amongst other things, a record of the Society's monthly meetings, the rules, financial statement, library acquisitions, annual report, &c.; and a series of interesting papers by the members on various horticultural subjects, the names of a few of which it will be useful to mention, to show the general tenor of the literary matter. They are: Laing's Floral Peacock, with a photographic reproduction; Anthuriums; Notes on the Cultivation of Pelargoniums, Lilies, Adiantums; Lilies of the Valley, and their Culture; Culture of the Fuchsia; English Cultivation of Bouvardias, Impatiens Sultan; Orchids at the Royal Gardens, Kew; Report of the London Chrysanthemum Shows in 1897; and several others.

The *Bulletin*, which makes a volume of some size, has several illustrations explanatory of the text, and the frontispiece consists of an excellent portrait of Mr. Harman Payne, whose claims to the Society's recognition are discussed by the president.

It is pleasing to record that the numerical and financial position of the Society seems in every way to have improved during the past year, and there is no doubt that the young men for whom the Society is primarily established greatly appreciate the labours of the executive in their behalf.

ANNUAL REPORT OF THE DEPARTMENT OF PARKS, BOSTON, U.S.A.

THIS Report, for the year ending January 31, 1898, chronicles no small amount of useful work successfully achieved. It is pleasant to hear of the various parks and play-grounds scattered about so large and densely populated a district, and that they are something better than mere shrubberies and meadows. The plantations are thoughtfully planned and skilfully kept up, while the recreation-grounds are especially adapted for various games, and not simply wildernesses. In connection with the open spaces are such institutions as gymnasiums, kinder-gartens, and, at the sea stations there is every accommodation for bathing. Various fresh plots of land have been acquired in the past year, and these are additionally valuable in view of the ever-increasing growth of the city. In the parks, native trees and shrubs are to be planted in preference to those from foreign countries, because these "grow more successfully, live longer, and

require less labour to keep them in good condition." The effect of them, from an artistic point of view, is likely to be far more natural, and, therefore, beautiful.

XYLEBORUS MORIGERUS.

SOME short time ago a pseudo bulb of *Dendrobium* was sent to this office by a correspondent infested with an insect, which he told us did much harm for its size (fig. 112, p. 389). He also forwarded a letter from an eminent entomologist containing a description of the insect, which we now publish:—

"It is now six or seven years since I had my first specimens from Bath, since then I have had it from two or three other localities in England, from Marseilles, Germany and Austria (or Hungary, I forget which), always as attacking *Dendrobiums*. Except by destruction of the plants, or at least of such portions as are attacked, which will necessitate a careful periodical search, I cannot suggest any satisfactory treatment. It is worth recollecting that the beetles themselves burrow in the stem to lay the eggs there, so that an untouched stem, or rather pseudo-bulb, ought to be really, and not merely apparently free from injury. It is just possible that washing the stems with lead arsenate, or something of the kind, might protect them. But this is purely a matter for experiment, and cannot be recommended upon any more solid grounds. I hope the creature will not do much damage. It has evidently got disseminated from some centre of importation." Walter T. H. Blandford.

HOME CORRESPONDENCE.

THE TIMELY PLANTING OF BULBS.—Mr. W. C. Wordsell (p. 361), in writing on "the principles and practices of bulb-growing," touches on the question of the proper season for planting, and rightly observes that such bulbs as Snowdrops and Crocuses must be put into the ground quite early in September at latest. But Mr. H. W. Ward (p. 348), states that "the present (November 12) is a good time to make plantings of most kinds of hardy bulbs out-of-doors for yielding supplies of cut-flowers for marketing next spring," and specifies Daffodils, Spanish Iris, and Snowdrops. Now, if the direct contradiction is not discourteous, I must assert that the middle of November is altogether a bad and a wrong time to plant these bulbs, and my opinion would not be high of the knowledge or the prospects of a market-grower who would plant on any large scale at so late a date. That amateurs still do so is evident from the advertisements of these bulbs which appear abundantly up to Christmas or even after. Few plants are treated with such scant consideration and so ignorantly as spring-flowering bulbs. Probably the long reign of the bedding-out fashion has had something to do with this: the ground could not be spared for bulbs until frost had cleared away the Pelargoniums and Lobelias. For this and other reasons the gardener came to regard bulbs as matters not to be thought of until all outdoor flowers were past. It is also a neat and convenient arrangement for the dealer to sell his bulbs during the "dead" season between Michaelmas and Christmas. But it is, of course, an utterly irrational proceeding to plant a Snowdrop (which in a mild winter may be in flower at the New Year) late in November. Any one who has really studied these plants knows that no bulb deteriorates so speedily when out of ground as the Spanish Iris. August is certainly the best month for planting it. The same week that Mr. Ward's notes appeared, my Narcissus-beds were being Dutch-hoed, and it was found that the very shallowest skimming was necessary, and extreme care at that, since the foliage was already level with or even breaking the surface. Let any one who is doubtful lift a few Narcissus bulbs in July, and note the fresh roots already put forth. Of course, it must be in human nature for the dealer to assure his customers that such bulbs planted in November will flower well in spring, and to some extent this is not untrue, for they are long-suffering, and resolutely bent upon attaining their end—i.e., flowering, and propagating their kind. But it is a simple impossibility that bulbs which naturally start into fresh growth in July and break the soil before Christmas, can, when planted three full months too late, accomplish to perfection their

threefold work of (1) producing the finest possible bloom, (2) making offsets of the maximum size, and (3) maturing their flower-buds for the second season hence. The contention of the dealer may be refuted by one plain question. Would he, if he had given £100 for some rare bulb of one of the kinds mentioned plant it himself in November? Common sense teaches us that in two English Novembers out of every three the soil is chilled, wet, and sticky, and a sorry lodging for bulbs with vitality already impaired by long exposure out of ground. *George Engleheart.*

HARDINESS OF SELAGINELLA DENTICULATA.—The reference to this plant in last week's *Gardeners' Chronicle*, reminds me of having seen a very large patch of it growing among the grass on the lawn at Kilmory, Lochgilphead, Argyshire. The late Mr. Brown, who was then gardener at Kilmory, said it had been growing there for years and was spreading rapidly. The patch was mown with the rest of the lawn, and it had become a dense green carpet. It would be interesting to know whether the patch is still flourishing, and if so, to what distance it has extended. *D. C.*

THE NATIONAL CHRYSANTHEMUM SOCIETY AND THE AQUARIUM.—More than one who has "taken up the cudgels" on behalf of this building as being the most suitable place in which to hold our exhibitions, claim that it is due to the place that the Chrysanthemum has attained such popularity. May I ask why the exhibitions which were held in the Aquarium some twelve or fourteen years ago did not make the same progress? I believe the present secretary of the National Chrysanthemum Society was the one engaged by the Aquarium Co. to organise those shows. Certainly, with the same secretary and building, they should have been continued to a great success, if there is any truth in the argument alluded to above. The National Chrysanthemum Society has been able to supply better paying exhibitions than those held previously by the Aquarium Company. If the Crystal Palace is too far away for the public to visit the exhibitions of the National Chrysanthemum Society, why do so many thousands visit the shows of cycles, poultry, &c.? *A. B. C.*

THE DISQUALIFICATION AT THE N. C. S. SHOW.—That the judges were bound to sustain the ruling of the classification committee none will dispute; but among other incurveds which are included in the list of "too-much-alike" varieties, and which are prohibited from being shown in the same collection, are C. H. Curtis and Major Bonaffon. In the *N. C. S. Year Book* the description given of these would lead anyone to think they were very dissimilar. The former is described as "colour rich golden-yellow, petals long and pointed, a large deep flower, perfectly incurving, robust, mid-season." Major Bonaffon is described as "pale yellow, large, rather flat, narrow petals, closely incurving, very strong grower, late and dwarf." Both varieties have been certificated by the N. C. S. as distinct varieties. I do not wish to infer that the N. C. S. is wrong in bracketing these varieties as being too much alike, but more care should have been exercised in the description of them by the compilers of the *Year Book*. *W. J. G., Exmouth.*

YOUNG GARDENERS AND THE ROYAL HORTICULTURAL SOCIETY'S EXAMINATIONS.—The letter of your correspondent, "A. D." (p. 354), on this subject calls attention to a matter with which young gardeners have certainly reason to be dissatisfied. The writer's proposed remedy is, however, too unsuitable to be thought of. To my mind, the remedy is quite simple. As at present conducted, the list of successful candidates is arranged in order, according to the number of marks gained, and with these marks prefixed to each name. Surely this is an antiquated method of procedure. Would it not be better to arrange the names in alphabetical order in each class, leaving the number of marks gained unpublished? By these means, an examination which now appears to be, to a certain degree, competitive, would be changed into one, simply judged into classes, each with a fixed minimum number of marks. Thus, I think, all cause of dissatisfaction would be removed. As a young gardener, and one who intends entering for their next examination, I offer this suggestion to the Royal Horticultural Society. *P.*

—With reference to the notes by "A. D." re the above subject, in your issue for November 12, p. 354, I quite concur with the Editor's closing remarks. In my young gardening days—and I can recall them with pleasure, for the midnight oil was

often burning in the bothy I then occupied—I underwent examinations which were then held annually by the Council of the Society of Arts, the Royal Horticultural Society, and the Science and Art department, South Kensington. The rules and conditions usually supplied to candidates invariably specified that a thorough knowledge of the subject was the first consideration; good composition, orthography, neatness of writing, &c., being secondary points. No examiner could possibly overrule such conditions of examination, especially in technical subjects, where a want of knowledge must be considered absolutely unworthy of a certificate, notwithstanding the excellence of literary composition. But why should young gardeners of the present day contend that they are incapable of



FIG. 112.—XYLEBORUS MORIGERUS: DENDROBIUM-BEETLE.

A, Pseudo-bulb; B, the same divided.

(See p. 388.)

literary composition, or that they are not competent in note-taking? The opposite ought to be the rule. In the first place, the facilities for obtaining a good early education are far in advance of the times when gardeners of my age went to school; also, the conditions of gardeners' everyday life produce greater tendencies towards the development of superior attainments in their intercourse with each other. Take, for instance, the advantages of mutual improvement societies, the greater number of horticultural exhibitions, &c., than formerly existed; the various benevolent institutions, the privileges the R.H.S. has offered to gardeners of all grades in taking part in their numerous debates, exhibitions, &c. Surely these onward movements have materially improved, not only the practical status of the present-day gardener, but the literary aspect of his condition too. To those who aver differently, my only answer must be, that they have greatly failed in deriving the best possible advantages from these institutions. Take again the illustrated descriptive catalogues that

are issued now in comparison to what we had from twenty-five to thirty years ago. Many of these catalogues may almost rightly be termed text-books, the graphic descriptions they give of plants, fruits, flowers, vegetables, botanical terms, natural orders, periods of flowering or ripening, origin and introduction of varieties, methods of propagation, &c., these, if carefully perused, contain funds of valuable information, in such simple language, that the youngest of the fraternity may easily understand and realise. The remarkable cheapness of other standard works from the press, and the improved tone and number of our serial publications, render self-help to gardeners no longer a thing of the past. But we have other sources also of finishing-off, if such a term is applicable, our horticultural education, both in a practical and literary capacity, through the medium of the "correspondence classes" which have been instituted during the past few years. What would I have given for a coach between the ages of eighteen and twenty-four, when my efforts were being strained to the uttermost? I well remember how pleased I was to receive the advantages of a few hours weekly in botany from the clergyman of the village. Looking also on the other side of the picture, there are far more inducements for gardeners to improve themselves than formerly, for horticulture, along with the other branches of art and science, has experienced the progressive effects of its revolutionary movements. The good situations which exist now are legion, compared to what they were. Take first the situations that municipalities have created, principally through the agency of sanitary improvements. County Councils, also, acting under the guidance of a technical instruction committee, have appointed numerous lecturers and demonstrators in horticulture. Market gardening in all its phases is fast becoming an important factor in agricultural pursuits, which is also opening out positions for experts; and this progressive movement in commercial horticulture being as yet in its infancy, undoubtedly further and greater developments in plant, fruit, flower, and vegetable growing will occupy thousands of acres more of land in our rural districts, which must tend to the promotion of individual talent and knowledge. With these positions at present within reach, and the possibility of further advances which must accrue as science in connection with horticulture and agriculture paves the way for higher methods of cultivation, and consequent better production of good supplies, our young gardeners ought clearly to realise the importance of devoting the importance of devoting the leisure hours of their earliest years to study. In concluding these remarks, I cannot refrain from calling the attention of my young fraternity to the "correspondence classes" now being advertised in the horticultural journals. By following a course of study there presented, they may receive a practical and literary education for a small fee weekly that will enable them to hold their own with college and laboratory students, provided that they will strenuously persevere in keeping pace with the work issued every week, which means incessant work and much self-denial for a year or two. It is astonishing what assistance experienced coaches have been to self-taught students in other scientific and commercial walks of life, and what difficulties have been overcome by their timely aid and influence. The duty of a good "coach" extends further than to correct and revise the work of his students; he should admonish where he finds weakness, stimulate where there is a lack of energy, give influential precept where carelessness prevails, define the importance of attention to minor details, and, above all, set a good example by keeping good pace with the work himself; never allowing the student to feel that he is being neglected by having to wait either for his examination-paper or the revision of his work. *Coach.*

THE SEASON AND ITS EFFECTS.—Mr. Mawley writes: "I am sending you two photographs, representing two non-competitive exhibits, one of Roses and the other of Chrysanthemums, which I set up at our local Chrysanthemum show on the 9th inst. In no previous year have I been able so late in the season to gather so many or such fine Roses. They were entirely from the open ground, and have received no protection whatever. *Edwd. Mawley.*

THE CAPE GOOSEBERRY.—I am sending you some fruits of the Cape Gooseberry grown out-of-doors, perfectly ripe, and of the usual size. The seeds from such fruits as those sent germinate freely on being sown in the spring. My employer wishes me to grow a good quantity next season for jam-

making. He has had some of the fruit converted into jam this year, but does not consider it so good in flavour as that which he has bought at the shops. I should be glad of any advice as regards the cultivation of the plant. *C. G. S., Plymouth.* [The plants, if set out when two years old against a south wall, should ripen good fruits in your locality. The growths should be trained thinly, close to the wall, and not crowded. It needs a generous, free, sandy soil; and to be kept free from red spider. Ed.]

THE DUTIES AND WAGES OF A GARDENER.—Some time ago, being in want of a situation, I inserted in a local newspaper the following advertisement:—

"Gardener (head), age 30, experienced in Vines, Melons, Cucumbers, Peaches, Chrysanthemums, Orchids, stove and greenhouse plants, kitchen and flower gardening, &c."

I received this reply. "October 15, 1898. In answer to your advertisement . . . I want a head-working gardener to take a position of trust. I shall be glad to see your references from your present and previous employers, and state your reason for leaving in both cases. In addition to the allowance I make, viz., free house, coal, vegetables, and lamp-oil, I only wish to give 19s. or 20s. per week, to include wife's services in scrubbing office-floor and stairs once a month, boiling poultry food daily, washing during our visit here, attending to my wants on weekly visit, and preparing house for our annual visit. I live here only about three or four months in the year, but pay weekly visits, and keep one horse to meet me at the station, it being looked after by a youth who assists in the garden, and whom the gardener is expected to board at 6s. to 7s. per week. Everything will be in the gardener's charge. The total area of my property is about four acres, divided into an acre of kitchen garden, two glasshouses about 50 feet long, each containing Vines, &c.; house and other buildings, plantation, orchard, lawns, &c. What family have you? of course, I should object to the children running about the garden at any time. Are you a total abstainer? If my terms are not acceptable, state what would be." *F.*

THE RENOVATION OF OLD AND SPENT ORCHARDS.—I will give you many readers an accurate description of the methods adopted with an old and exhausted orchard, which after the treatment received gave every satisfaction, both as regards the crop and the quality of fruit. The trees in the orchard here alluded to are from seventy to eighty years old, and the land has always been under grass. The trees were very much cankered, and clad with lichen and moss. Last December men were set to cut out all decayed and cankered branches, and to afford the trees a careful and thorough pruning, admitting as much light and air as possible into the heads of the trees; then the turf was removed around each for a distance of 5 feet from the stem and carted away, and the denuded soil carefully pricked over with a four-pronged digging-fork. Then each tree had a good mulching of farmyard manure of about 5 cwt.; all having been made neat and tidy, the garden-engine was brought into requisition, and each tree given a thorough soaking of pond-water, washing down to the roots the constituents of the manure. To all appearance the treatment the trees received has put new life and vigour into them, as they have made during the summer fine, strong, healthy wood. I send you a sample of some fruit gathered from the trees so treated, namely, Blenheim Orange Pippin, King of the Pippins, and Ribston Pippin, all of which will testify as to the quality of fruit gathered from an old and spent orchard [excellent]. I may say, that the labour and expense involved will amply recompense the cultivator, and when the produce is put upon the market the returns will be also remunerative, as remarked lately one of the principal market-salesmen, as he drew my attention to several skeps of Apples sent for sale that were a very poor sample as to size and quality. That some people in possession of very good orchards seldom, as a rule, look into or take the least interest in them from the time they gather the crop until the next year. *George Mackinlay, Wrest Park.*

RHODODENDRON CHAMÆCISTUS.—Will you kindly explain why some botanists have thought fit to correct Linnaeus, and to create a new species for our charming little *Rh. chamæcistus*? which has, in my opinion, the same right to the name "*Rhododendron*" as *eleagnoides*, *pendulum*, *salignum*, *nivale*, or even *setosum*, of Sir W. Hooker. *Constant Reader.* [The genus *Rhodothamnus* was established by the elder Reichenbach (*Flor. Germ. Exc.*, 417, and *lc. Flor.*

Germ., t. 1157, f. 4 to 5) It was adopted by Bentham and Hooker, *Genera Plantarum*, ii., p. 597 (1883), and is maintained in the *Index Kewensis*, Fasc. 4, p. 713 (1895). It is distinguished from *Rhododendron* chiefly by the seeds, which have a crustaceous, leathery coat, instead of a loose membranous one. The disc surrounding the ovary is inconspicuous, whilst in *Rhododendron* it is readily seen. The capsule is loculicidal instead of septicidal, as in *Rhododendron*. We think botanists are morally bound to follow the indications of the *Index Kewensis*, until due cause be shown to the contrary. In gardens where convenience rather than strict technical accuracy is studied, the plant may still retain its old name. Personally, we should have preferred to make *Rhodothamnus* a section of *Rhododendron*, to which it is surely as near as *Azalea*, but that is a matter of opinion. Ed.]

UTILISATION OF GREEN TOMATOS.—In the *Gardeners' Chronicle* of November 12, 1898, p. 354, "D. F. F." writes, that Tomato-growing in the open would not pay unless the green fruit could be "converted into pickles." But there are other ways of utilising the green Tomatos which remain at the end of the season on the plants grown in the open. Here is a recipe for making green Tomato jam, which is very nice:—6 lb. of green Tomatos, 4½ lb. of sugar, juice and grated rind of three lemons, six teaspoonfuls of ground ginger. Break up the green Tomatos, and boil them in their own juice (no water) till the skins are quite soft. Add the sugar and the other ingredients, and cook as for ordinary jams. Besides using it as jam, there is a nice sweet dish that can be made out of it, called "golden toast." Soak a thickish slice of bread (or more according to need) in milk for half-an-hour. Then fry it a golden brown in hot butter; spread some of this Tomato jam on it, and keep it hot until ready to serve—very nice. Then green Tomatos make very good soup by boiling them in their own juice as above, and pressing them through a sieve, and mixing the green *purée* with stock and seasoning it. But as the green *purée* is somewhat acid, it requires the addition of a teaspoonful of sugar. Then, again, there is an Italian way of cooking green Tomatos. Fry a chopped-up clove of garlic in oil till it begins to brown (it should not get burnt), with a seasoning of finely-chopped Sage, add a few tablespoonfuls of stock, and cook the green Tomatos in this, cut in halves transversely, add pepper and salt, and when done bind the whole with the yolks or two or three eggs beaten up. Many persons are at a loss to know what to do with the green Tomatos remaining on the plants in the autumn, and these are various interesting ways of utilising them. *E. Bonavia, M.D.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 22.—The usual fortnightly meeting of this Society was held on Tuesday last in the Drill Hall, Westminster. The sudden change in the temperature that took place during Monday night very possibly influenced the character of the exhibition, there being few tender species of plants before the Committees. The display upon entering the hall might reasonably have been mistaken for a Chrysanthemum exhibition, as Chrysanthemums were the predominant feature of the show. Many large collections of cut blooms from amateurs and the trade contributed to this result, but the premier-exhibit was one from Mr. NORMAN DAVIS, Framfield, Sussex, a description of which will be found below. This exhibit was an excellent lesson in effective arrangement, as well as being an example of unusual cultural merit. Decorative plants were shown by Mr. MAY, of Edmonton, and there were a few other species of plants, including some of Messrs. VEITCH's winter-flowering Begonias. There were few Orchids shown, but these included some valuable novelties from Sir TREVOR LAWRENCE's collection. Very little fruit was submitted to the committee, and the only award given was made to an Apple from Messrs. HARTLAND, of Cork.

Floral Committee.

Present: W. MARSHALL, Esq. (Chairman); and Messrs. Jno. Fraser, C. T. Druery, Geo. Stevens, Jas. Hudson, C. J. Salter, Chas. E. Pearson, Geo. Gordon, J. T. Bennett-Poll, J. D. Pawle, Chas. E. Shea, Ed. Beckett, Chas. Blick, D. B. Crane, Chas. Jeffries, and Jas. Walker.

Decorative plants were again shown from Mr. H. B. MAY's nurseries at Dyson's Lane, Upper Edmonton. There were *Adiantum* Ferns, *Gloire de Lorraine* Begonias, many pretty varieties of *Asplenium* and *Davallia* Ferns. *Dracena Sanderi* was also noticed in small but pretty specimens, and a number

of varieties of *Cordylina*, with variegated and coloured leaves, affording considerable variation in these respects, from the broader-leaved *Renarde* to *Perfection*, *Jamesii*, and others with leaves of comparative narrowness. A small group was made also of *Bouvardias* in bloom, both double and single-flowering varieties, including the bright scarlet *President Cleveland*, *Priony Beauty*, a very pretty single pink-flowered variety; and the well-known *Vrelandi* (*Silver-gilt Banksian Medal*).

Messrs. T. CRIPPS & SON, Tunbridge Wells, contributed a group of plants of *Euphorbia* (*Poinsettia*) *pulcherrima*. These well-grown plants, about 2 feet in height, being arranged on the floor, created the most vivid colour-effect in the building (*Silver Flora Medal*).

Mr. W. BULL, new plant merchant, 536, King's Road, Chelsea, showed as a new plant *Epiphyllum truncatum* *Princess*, with pale bluish-coloured flowers, and the habit of the type (*First-class Certificate*).

ALFRED KINGSMILL, Esq., The Holt, Harrow Weald, showed berried shoots of *Vitis heterophylla*; and a shoot of *Skimmia Formani*, furnished fully with the berries of 1897 and 1898.

Mr. GILBERT CHRISTY, 25, Lime Street, London, showed two plants of a rare species of *Begonia* from Brazil, named *venosa*. It had a thick, fleshy stem 1 foot in height, of a pinkish tint, and leaves covered on both sides with a white tomentum. The flower-stalk was terminal, 12 inches long, and the flowers were small and white.

Messrs. J. VEITCH & SONS, LTD., Chelsea, showed again the beautiful-flowered hybrid *Begonias* *Myra*, *Winter Cheer*, and *Ensign*, raised between *B. socotrana* and some tuberous varieties.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. Bain), showed six plants of *Ornithogalum lacteum*, a species with thick, fleshy leaves, and flower-stalks 20 to 24 inches high, terminated by a spike of pure white blossoms, having yellow anthers.

CHRYSANTHEMUMS.

The most striking exhibit of Chrysanthemum blooms was one from Mr. NORMAN DAVIS, of the Framfield Nurseries, Sussex. One of the oldest growers, Mr. Davis is evidently one of the most skilful, and since he removed his sphere of operations from crowded Camberwell to a purer district in Sussex, he has shown some extraordinarily good flowers. The exhibit on Tuesday was displayed on one of the central tables, and covered about a half length. In the centre of the table were some handsome vases and trumpet-glasses, the latter being more than 8 feet in height. One of these prettily furnished with good blooms of Western King, and *Berberis* and other suitable foliage capably illustrated the best way in which to see these large, somewhat formal-looking, Chrysanthemums. It was certainly praiseworthy. A basket, splendidly furnished with single-flowering varieties, was more artistic, but less bold and handsome. The exhibit very finely exemplified almost all the varied forms the Chrysanthemum has yet adopted, and in small baskets were the thread-like flowers, as Mrs. Jas. Carter and others. Larger, but still decorative varieties, including *King of Plumes* (yellow), *Framfield Pink*, *Queen of the Market*, a new one, *Ivory-white* in colour, with good but not high centre, &c. There were a few *Anemone*-like blooms, and also some of *Pompons*.

Five or six dozen blooms of *Madame Carnot*, and the yellow sport, *G. J. Warren*, in lesser quantity, showed the Japanese Chrysanthemum in its largest, we had nearly said monstrous, size. Mr. DAVIS has always shown this variety in extraordinary fine character. A small Gold Medal was deservedly awarded this exhibit.

Mr. W. J. GODFREY, Esq., Esmond Nurseries, Devon, showed about seven dozen cut blooms upon boards, in addition to some furnished with longer stems. Several novelties were submitted for certificates, but beyond *Chatsworth*, which was included in several collections, none of these was successful. There were certain very promising varieties however, as *Le Grand Dragon*, a good yellow Japanese; *Mons. Fartzor*, an incurved Japanese, also yellow, with a few forks upon petals; *Louis Dallé*, a Japanese flower with reddish petals, having buff reverse, the reverse being very evident; *Lord Coleridge*, a yellow incurved, but its capabilities could hardly be gauged; &c.

A collection of Chrysanthemum blooms was exhibited by the Dowager Lady FREAKE, Fulwell Park, Slough. The blooms were arranged as triplets in bottles, and were illustrative chiefly of Japanese varieties (*Bronze Banksian Medal*).

A magnificent exhibit of about sixty blooms, representing new English-raised seedling varieties, was shown by Mr. H. Weeks, gr. to Lady BYRON, Thrumpton Hall, near Derby. An Award of Merit was recommended to an excellent Japanese variety named *Mrs. Barkley*, described in a report of the meeting of the National Chrysanthemum Society's Floral Committee on p. 395. There were many very promising varieties in this collection, including *Edith Dashwood*, a tinted Japanese, and many others.

A collection of thirty-six blooms of Japanese varieties from T. B. HAYWOOD, Esq., Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), was very fine. The exhibit included many novelties, and most of them were represented in their best condition (*Bronze Banksian Medal*).

The incurved varieties were illustrated very finely by an exhibit of numerous varieties from F. W. FLIGHT, Esq., Cornstiles, Winchester (gr., Mr. W. Neville), and an award of a *Silver Banksian Medal* was recommended.

Messrs. CANNELL & SONS, Home of Flowers, Swanley, staged a large number of Chrysanthemums. The exhibit was particularly rich in decorative varieties, including the thread-like section, such as Mrs. Filkins, &c., also many good single-flowered varieties. Messrs. Cannell & Sons

exhibited well-coloured blooms of the Japanese variety Chatsworth (Award of Merit); also of Mdle. Lucie Faure, a fine white incurved Japanese variety. An Award of Merit was also recommended to reflexed variety Charles Jutt; Surpassé Amiral was likewise very good (Silver Flora Medal).

Mr. W. WELLS, Earlswood Nurseries, Redhill, had a very attractive exhibit, filling about an equal space to that previously noticed from Mr. Davis. The Australian-raised Japanese varieties John Pockett and Nellie Pockett, were well shown by Mr. Wells. These popular varieties have been frequently described in these columns. Julia Scaramanga and Beauty of Sholing, a very attractive deep chestnut-coloured decorative variety (Award of Merit) were noticed. A few new and pretty single-flowered varieties were also shown, including Earlswood Beauty, a very large ivory-white-coloured variety, with bright yellow disc (Award of Merit); and Daisy Brett, a pure white flower, of fine form (Award of Merit). Chatsworth (Award of Merit), and Mrs. White Popham were also included in this exhibit (Bronze Banksian Medal).

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), staged a small but interesting group, in which all the specimens were remarkable either as being new, rare, or highly-cultivated plants. In the last-named class were two fine *Calanthes*, remarkable for their splendid growth and strong flower-spikes. Of these the new *C. x labrosior*, a fine, large, silvery-white flower, with a slight blush tint on the lip, which had a pale primrose-coloured base, secured an Award of Merit; and for *C. x Bryan*, a well-known hybrid, raised by Mr. N. C. Cookson, having a grand inflorescence of white flowers, with dark claret-coloured centre, the spike rising from a pseudo-bulb 8 inches in circumference, a Cultural Commendation was awarded. Sir Trevor Lawrence also showed for the first time a remarkable hybrid *Dendrobium*, viz., *D. x formoso-Lowi* (*formosum* ♀, *Lowi* ♂), a production which is all the more creditable because neither of the parents is generally a good grower for any length of time, unless very well managed. The flowers of the novelty are exactly intermediate between the two species used in producing it, both in size and colour. The sepals and petals are white with a very faint cream-coloured

Messrs. J. VEITCH & SONS, Ltd., Royal Exotic Nursery King's Road, Chelsea, showed *Oncidium pectorale*, a supposed natural hybrid of the *O. curtum* class. The sepals and petals were yellow, evenly barred with brown, and the lip bright yellow.

J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whiffin), was awarded a Silver Banksian Medal for a pretty group of excellently-grown and well-flowered plants, the specimen of *Cymbidium x Winnianum* with nine spikes of flower which occupied the centre of the group being much the finest of its kind yet seen, and well deserving the Cultural Commendation given. At the end of the group was a very fine form of *Cymbidium Tracyanum*, with rich reddish lines in the sepals and petals, and far finer than any of the importations received after the original appeared; and also conspicuous were two good *Cattleya x Mantini*, a nice example of *Laelio-Cattleya x Apollonia* (*L. purpurata* x *C. Dowiana*), *Cattleya maxima*, some fine *Oncidium varicosum*, *O. tigrinum*, *Sophrontitis grandiflora*, *Odontoglossum Andersonianum*, &c.

Sir WM. MARRIOTT, Down House, Blandford (gr., Mr. Denny), showed *Laelio-Cattleya x Clonia* (*C. Warscewiczii* x *L. C. x elegans*) with light lilac sepals and petals, and dark purple front to the lip. The cross was originally raised by Messrs. Veitch, and flowered in 1894, and now again by Sir Wm. Marriott.

H. F. SYMONDS, Esq., Woodthorpe, Beckenham (gr., Mr. G. Day), showed a group made up of *Oncidium varicosum*, *O. pretextum*, *O. Forbesii*, *O. tigrinum*, *Odontoglossum grande*, *Masdevallia macrura*, *Cymbidium Tracyanum*, *Cypripedium x Lecanum superbum*, *Erenthus Leonis*, *Sophrontitis grandiflora*, &c. (Bronze Medal).

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, showed flowers of *Masdevallia Veitchiana* "Prince des Galles" (almost wholly orange-scarlet); and *Mormodes Lawrenceana*, a tawny-yellow species of the form of *M. bucinator*, but with hairy lip.

J. T. BENNETT-POE, Esq., Holmewood, Cheshunt (gr., Mr. Downs), showed a splendid six-branched spike of a fine form of *Oncidium tigrinum*, and a fine spike of *Aërides Lawrenceana*.

C. E. HARVEY, Esq., Yardley, Birmingham, sent *Cypripedium Charlesworthii*; J. LISTER GODLEE, Esq. (gr., Mr. John Medcalfe), Whip's Cross, Walthamstow, showed a hybrid *Cypripedium* resembling *C. x T. B. Haywood*; Mr. J. FITT, gr., Trumpet Hill, Reigate, showed a bunch of twin-flowered spikes of *Cypripedium insigne*, showing great vigour; Mr. W. H. HOLAH, Richmond, showed a brown-tinted *Lycaste Skinneri*.

Fruit Committee.

Present: Philip Crowley, Esq. (chairman), and Messrs. A. F. Barron, M. Gleeson, Jas. H. Veitch, J. Cheal, Alex. Dean, J. Willard, J. W. Bates, W. Pope, Geo. Reynolds, Geo. Wythes, Alderman H. Balderson, F. Q. Lane, Jas. Smith, and Robt. Fife.

An Apple, Ballenora Pippin, was recommended an Award of Merit. It is a deep red fruit, in colour similar to that of *Mère de Ménage*, almost equal over the whole surface; medium in size, higher on one side than the other; eye large and open, set in a deep cavity; stem apparently short, stout, set in a moderately-deep, funnel-shaped, russet-coloured cavity. It has a nice soft flesh, and in flavour is somewhat between Blenheim Orange and Cox's Orange Pippin. It would probably be best in October. It was shown by Messrs. R. HARTLAND & SON, Lough Nurseries, Cork, who had another variety of Apple, named Ahern Beauty, very different in form to Ballenora Pippin, but possessing certain characteristics found in that variety.

Seedling Apples were also shown by Sir JOSEPH PULLEY, Lower Heaton, Hereford (gr., Mr. Williams); Mr. A. Ward, gr. to Lady EMILY FOLEY, Stoke Edith Park, Hereford; and Mr. G. RAWLINGS, Pen-y-Van, Whitebrook, Monmouth.

Mr. LEWIS J. DUNBAR, Heath Park Nurseries, Hemel Hempstead, showed ten very large specimens of *No Plus Ultra* Onion.

Artificial Manures in the Garden.

In the afternoon there was delivered a lecture upon the above subject by Mr. A. D. HALL, Principal of the S.E. Agricultural College, Wye.

After a few words of introduction, which had reference to the benefits attending the use of artificial manures in the garden, Mr. Hall went on to say he believed the average gardener had not the necessary knowledge to enable him to buy or use such manures to the best advantage. In this respect it was stated that generally the farmer was far ahead of the gardener. It was a wrong and decidedly expensive practice to use compound (proprietary) manures the ingredients of which are unknown to the purchaser. It is costly because in most instances the price of the compound bears no comparison at all to its value. Neither can any useful experience, said Mr. Hall, be gained from its use. If the plants were benefited, it is not known to which of the ingredients this is due, and the gardener has thereby acquired no knowledge that he can turn to account in the future. It is much better to use simple manures or compounds of them, in the place of all mixtures sold as such, and the results in such case will be useful experience.

In all manures, said the lecturer, there are only three ingredients that are practically useful. These are nitrogen, phosphates, and potash. Dung contains about ½ per cent.



FIG. 113.—KENTIA KERSTENIANA.

(See our issue for November 12, 1898, p. 357, column a, under heading "Messrs. Sander & Co.")

Mr. J. H. WITTY, Superintendent of Nunhead Cemetery, showed a few very curious flowers of Japanese seedlings. One of these, Golden Shower, a flower in which the florets resemble mere threads, and droop around the flower-head about 2 to 3 inches, was recommended an Award of Merit. The florets are gold and red in colour. The variety What Ho, though interesting, was not considered worthy of an award.

Mr. N. MOLYNEUX, gr. to J. C. GARNIER, Esq., Rooksbury Park, Fareham, showed three promising incurveds, named Nellie S. Threlfall (white), Earl of Crawford (silver and light purple), and Golden Gem.

Mr. W. SLOGROVE, gr., Gattton, Reigate, showed a flower of a variety of Japanese *Chrysanthemum* named ina Dabbs, bright yellow, with broad, slightly incurved florets, the flower globular and full.

Orchid Committee.

Present: Sydney Courtauld, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), D. B. Crawshaw, R. Brooman-White, H. Little, A. H. Smee, E. Hill, H. Ballantyne, W. H. White, H. J. Chapman, T. W. Bond, W. H. Young, F. J. Thorne, W. H. Protheroe, and J. Douglas.

shade, and the lip pale yellow on the side-lobes, and white in front, a number of raised hairy lines of a rich orange-brown hue radiating from the base and spreading over the middle area (Award of Merit). Of the two new hybrid *Cypripediums*, the most distinct was *C. x Argo-Morganæ* (*Argus* ♀, *Morganæ* ♂), with bold flowers, the upper sepal being whitish, with some very narrow dark lines; the petals light rose, with very conspicuous chocolate-coloured blotches, and the lip purplish-rose (Award of Merit). The other was an unnamed hybrid of *Cypripedium bellatulum*, with cream-white flower, densely spotted with purple, and having the drooping petals longer than usual, and slightly twisted.

The only species shown was the remarkable new *Cirrhopetalum appendiculatum*, the first to be shown of the class bearing but one large flower on a scape. The flower was about 8 inches in length, the upper sepal white, with three purple lines, and bearing at the apex a long slender purple plume; the petals were also white, with one purple line, and a brush-like plume at the end of each; the thick, tongue-like labellum two shades of bright-purple, and the long lower sepal whitish, with purple marks, and united (or so closely placed as to appear to be so), finishing up in a slender point—a remarkable species from Bengal (Botanical Certificate).

each of these. The chief nitrogenous manures are nitrate of soda and sulphate of ammonia. Phosphates are plentiful in bones and in some guanos. Purely phosphatic manures are basic slag, which may be used upon wet or clay soil, and superphosphates, an ingredient that is not suitable for such soil, but may be used in sandy situations. The lecturer gave the above only as instances of a large number of existing sources.

Proceeding to speak of the uses or effects in use of the three manurial agents, Mr. Hall said that nitrogen stimulates the plant to increased growth. It develops the vegetative forces of the plants, and hinders or defers their maturity. Reference was then made to experiments that have been made at Rothamsted. Grasses that had been continually fed with nitrogen made extraordinary growth, but scarcely a flower can be seen upon them. Their maturity has become so deferred that they have partly lost the habit they possessed of blooming regularly. But in the case of leafy crops, which include most of the Brassicas, nitrogen could be used to much advantage. All nitrogen, before it can be useful to plants, must first become a nitrate, and, as this nitrification proceeds very slowly during cold weather, Cabbages or other such crops in early spring will give a very appreciable response to judicious applications of nitrogen. But Mr. Hall had a word of caution for those who would be likely to apply nitrogen indiscriminately or with too liberal a hand. If the Cabbages are grown in a private garden, and can be at once removed to the kitchen for preparation for the table, the soft fleshy growth in them will be very appreciable; but the market gardener, who must needs despatch his produce many miles before they are sold, which have, therefore, to keep some considerable time before they can be used must be careful. If he gives his Cabbages too much nitrogen, their texture, though suitable for immediate consumption, will result in decay. At Wye it was the case in the spring that the Strawberry plants were showing to bloom prematurely or before a sufficient amount of foliage had been made. In this case nitrogenous manure was given the plants with good effect, as its tendency was to hurry the producing of leaves and to defer blooming.

After stating that ordinary dung was mainly a nitrogenous manure deficient in phosphates, Mr. Hall proceeded to speak of phosphates, and in relation thereto, referred to experiments he had conducted in relation to the manuring of Hops at Marden in Kent. Briefly, these were as follows:—The Hop-fields had been previously manured as are ordinary market gardens. Plenty of dung, wool, and shoddy, had been given the ground, and it is scarcely surprising, therefore, that little or no gain in the crop was effected by using nitrogen compound. A compound gave better results, but the best effect was obtained from the use only of phosphates. The chief effect of phosphates, so far as these can be traced, is to increase the flavour in fruits, the colour in flowers, &c.

Of the remaining manurial element, potash, Mr. Hall had very little to say. It was abundant in clay soil. He frankly confessed that science at present could not say what its exact work or use is. More experiments were needed in the case of potash. When was the best time to use artificial manures to garden crops? Mr. Hall answered the question himself by saying that plants respond to such applications in a much greater degree when they are young. One ounce of nitrogenous manure to a square yard, or 2 cwt. to an acre, Mr. Hall regarded as the "absolute maximum" that should be used. For general crops, about half that quantity would be better. Phosphatic manures being altogether different in two respects, may be used to any degree without injury. They do not waste in the soil, neither will they become available as food in greater quantity than is needed.

FEEDING PLANTS IN POTS.

Artificial manures might be used with ill effects, said Mr. Hall, in the case of plants in pots where the roots are confined in a small area, if care were not used in its application. Some of the guanos are very injurious to the tender roots of the plants. It would be best to mix the manure with the soil some time before using it, that it might mellow down. But sulphate of ammonia and the superphosphates are perfectly soluble in water, and liquid is the best medium in which to supply artificial manures to pot plants. One ounce to a three-gallon can of water would be always sufficient, and half that quantity more usually should be that used.

BEST MANURES FOR CERTAIN CROPS.

It is not known, said Mr. Hall (and this to the surprise of some of his audience), what is the best manure for this or that crop. Before this could be known accurately, there must be systematic and continued experiments, and the results clearly tabulated and compared.

There has been much written, continued Mr. Hall, upon this very matter, plants had been burned and an analysis made of the ash, with a view to proving what the particular crop had abstracted from the soil, and to replacing

these ingredients in the soil by a system of manuring. Such practice and theory is a fallacy. The composition of the ash of a plant bears no part or relation to the manure that it needs to be afforded by the soil. Swedes abstract a great amount of nitrogen from the soil, but what farmer thinks of making nitrogen his principal manure for Swedes? asked the lecturer.

THE DISCUSSION.

Mr. A. DEAN appeared to dissent from many of the remarks made by Mr. Hall. He did not agree that dung was of little value. It was, and would remain, the principal factor in our manurial system. He referred to experiments that had been made in Surrey, and to the absolutely negative results that had followed the use of phosphates; but this was explained later by Mr. Hall, who said that the insufficient rainfall during the past summer would tend to this, and the sandy soil of Surrey was peculiarly unsuitable for experiments with phosphates.

Mr. BERRY, Sittingbourne, Kent, complained that he had come to hear the lecture, and Mr. Hall had told him nothing, evidently referring to the absence of special advice as to the best manures for different crops. He somewhat startled the audience by saying that his practice was to mix all sorts of manures, compounds and others together, and use this mixture of mixtures for most crops.

Dr. MASTERS, F.R.S., who followed, condemned the practice of such quackery, and complimented Mr. Hall upon the lecture he had delivered, and urged gardeners to follow the advice that had been given them to make experiments for themselves in regard to the different crops in their own gardens, rather than trust to analyses made for abstract purposes, but which required modification in practice in order to meet the complex conditions met with in cultivation.

NEWCASTLE & DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

NOVEMBER 8.—The usual meeting of this society was held at 25, Westgate Road, on the above date. Mr. Bullock presided over an attendance of nearly forty members.

The Certificate offered for best six Japanese Chrysanthemums was won by Mr. Farquharson, gr. to R. O. LAMB, Esq., Denton, who staged six superb blooms of V. Morel, W. H. Lincoln, Lady Byron, Boule d'Or, Madame M. A. de Galbert, and Chas. Davis. There were six entries. A discussion on the Chrysanthemum, introduced by a very practical paper by Mr. Pettifer, The Cedars, Low Fell, then took place, in which many took part.

BIRMINGHAM CHRYSANTHEMUM.

NOVEMBER 8, 9, 10.—This annual show, which was held at Bingley Hall, Birmingham, on the above dates, was of a most successful character, both in regard to the class of exhibits, and also the attendance of the public.

The accountants have now completed the returns of the attendance of the public, and during the three days it is gratifying to note that independent of subscribers' tickets no fewer than 23,445 of the public paid for admission. It is quite evident that the Birmingham public are fast looking upon their Chrysanthemum show as being one of the events of the year. The arrangements made for the show reflect the greatest credit upon the committee of the Birmingham Chrysanthemum Society.

At the conclusion of the show, the magnificent collection of fruit exhibited by the Queen was distributed among the hospitals of the city, in accordance with her Majesty's command. The Lady Mayoress apportioned the fruit among the institutions according to the number of their inmates, and the distribution was carried out by the president of the show (Mr. Latham), the vice-president (Mr. Pope), and one of the secretaries (Mr. Hughes). The liveliest interest was taken in the distribution by the patients and officers of the hospitals, and the Queen's gift created great satisfaction throughout the wards. The idea of presenting the fruit to the hospitals emanated directly from Her Majesty, and caused so much pleasure that the officials of the show contemplate starting an entirely new class next year, offering prizes for exhibits on condition that they are afterwards given to the hospitals. This year, indeed, one or two exhibitors followed Her Majesty's example. The Queen's exhibits consisted of a large quantity of Pine-apples, Grapes, Plums, Apples, Pears, and other kinds of fruit. Some of the Grapes were grown at Hampton Court, on the "big Vine," which is 130 years old, and this year bore 1½ ton of fruit. The rest of the fruit was grown at Frogmore. Her Majesty's Head Gardener, Mr. Owen Thomas, was at the Birmingham show throughout.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

NOVEMBER 9 to 14.—There was a fine display of Chrysanthemums in Paris on the occasion of an exhibition by the above society. It was opened on November 9, and was held in the Jardin des Tuileries.

The show itself was in a large tent. Handsome groups of Chrysanthemums, mingled with Bambusa, Euonymus, Laurels, &c., lined the sides whilst in the body of the tent

as a relief to the colours of the Chrysanthemums, some fine specimens of Phoenix canariensis, Chamaerops excelsa and humilis, in tubs 8 to 12 feet high, were introduced to great advantage. Japanese varieties, reflexed types, were in considerable numbers, and Anemones, Pompons, and single-flowers were well represented.

The competition was very great, especially in Japanese varieties. Cyclamens, winter-flowering Carnations, Begonias, and Orchids, were shown in praiseworthy condition. Apples, Pears, Grapes, were very well represented, and most of the competitive stands were tastefully arranged. There were also very odd collections of fruits and vegetables. In the open air, well-trained fruit-trees, palmettes, cordons, standards, &c., were planted out, and also very fine specimens of Magnolia grandiflora, Euonymus, and many other hardy evergreen shrubs were shown.

Amongst the principal exhibitors were Messrs. Vilmorin, Andrieux & Co., Paris, A. M. Lemaire, August Nonin, M. Yvon & Sons, M. Salomon, Messrs. Pallerand Brothers, M. A. Bruneuse, E. Rossette, W. Wells (Earlswood, England), Alexandre Regnier, M. Croux & Sons, E. Bert, Vallerien Brothers, R. Truffaut, &c., &c.

WELLINGBOROUGH CHRYSANTHEMUM.

NOVEMBER 11, 12.—The fourteenth annual show of the above Society, held on the above dates, was decidedly the best that has yet been held at Wellingborough. The groups were not so good as they have sometimes been, but this was more than counterbalanced by the excellence of the cut blooms and of the fruit exhibits.

For a collection of plants, Mr. WARD was placed 1st; and also for four distinct trained plants, and the best specimen plant.

Mr. J. S. HAYES, Castle Ashby Gardens, Northampton, was most successful in the class for twenty-four Japanese and incurved blooms, and for twelve Japanese blooms. Mr. KIBBY, Northampton, had the best incurved; and Mr. HAYES, the best twelve white Chrysanthemums.

In the amateurs' classes, which were well contested, Mr. WARD was the chief winner.

The open class for Apples was won by Messrs. H. & E. JACK. Mr. LATIMORE had the best Grapes; and Mr. J. T. HAYES the best collection of eight kinds of vegetables.

Through the energy of the Secretary, Mr. Lilley, and the committee, the show is gradually gaining in popularity. H. K.

BRADFORD CHRYSANTHEMUM.

NOVEMBER 11, 12.—The twelfth show in connection with the above flourishing Society was held in St. George's Hall. The large groups of plants were arranged down the centre of the hall, and three excellent ones were shown of Chrysanthemums only.

Dr. HY. SMITH, Granville House, was the best exhibitor, followed by Mr. L. SHEARMAN, Undercliffe Cemetery.

The best group of miscellaneous plants was from Messrs. J. W. MOORE & Co., Ltd., Rawdon.

Cut flowers were well shown. For twenty-four Japanese blooms, Mrs. MASON, Bankfield (gr., Mr. Midgley), was 1st, and his stand included many fine specimens; 2nd, W. H. TATE, Esq., Woolton, Liverpool (gr., Mr. G. Haigh).

The best collection of twenty-four incurveds was from G. B. COCKBURN, Esq., Birkenhead; 2nd, W. H. TATE, Esq., Woolton. J. B. COCKBURN, Esq., had the best exhibits of twelve incurveds; and Mrs. MASON, Bankfield, the best collection of twelve Japanese blooms.

Plants.—Some pretty specimens were shown. The best collection of six table plants was shown by H. GOODALL, Esq., Pudsey; and the best six Primulas by T. ARTON, Esq., Rawdon.

Fruit.—Mrs. MASON, Bingley, had the best exhibit of two bunches of black Grapes. A tray of fine vegetables was shown by Mr. KNOWLES, Moorhead, Shipley.

DEVIZES CHRYSANTHEMUM.

NOVEMBER 15.—The annual Chrysanthemum Show, held in connection with the Devizes Benevolent Society, took place in the Corn Exchange on the above date, and was the means of bringing together some flowers of very high quality. A bazaar is held in connection with it, and the proceeds are devoted to charitable purposes. The arrangements of the show were carried out by Mr. Thomas King, of The Castle Gardens, and they were all that could be desired.

There were six stands of twenty-four incurved varieties, and though the stands all had commendable flowers, some blooms were wanting in finish. There was a very good stand indeed from Mr. J. Dumble, gr. to Sir CHARLES E. G. PHILLIPS, Bart., Picton Castle, Haverfordwest, the flowers being of large size, even, well built, and fresh. Mr. C. J. SALTER, gr. to T. B. HAYWOOD, Esq., Reigate, was 2nd, with a good stand, fresh, well developed, but lacking the size of those in the previous stand.

Mr. SALTER was 1st with twelve blooms of incurved varieties, having a good even exhibit; 2nd, Mr. W. Robinson, gr. to the Right Hon. Lord Ludlow.

The best collection of twenty-four Japanese blooms was a very fine one, including large, full, and well-balanced blooms, from Mr. F. S. VALLIS, Bromham Fruit Farm; 2nd, Mr. C. J. SALTER.

Mr. VALLIS had the best twelve incurved Japanese, showing,

in fine character, Mrs. W. H. Lees, Lady Ridgway, Graphic, Western King, and Modestum. 2nd, Mr. C. J. SALTER, who had very good blooms.

The best twelve Japanese from exhibitors living in Wilts only were shown by Mr. H. CLACK, gr. to Col. E. COLSTON, M.P., Roundway Park, who had fine flowers. Mr. W. ROBINSON was 2nd.

The best twelve Anemones came from Mr. H. CLACK, a very fine lot of blooms. 2nd, Mr. SALTER.

The best group of sixty plants of Chrysanthemums came from Mr. H. CLACK, who showed well-grown and flowered examples, edged with foliated plants, and forming a bold and striking feature in the centre of the hall. 2nd, Mr. W. Mantell, gr. to Col. DUNN, Rowdeford.

In the class for a basket of autumn foliage and berries, over twenty were staged, the 1st prize being won by Miss MABEL BROOKS. These proved a very attractive feature, and occasioned much local interest.

A stand of twelve very pretty varieties of Pompon Chrysanthemums was staged by Mr. SALTER, and was Highly Commended.

THE LOUGHBOROUGH AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

NOVEMBER 15.—A fortnightly meeting was held on the above date, when a prize essay was read upon "The Cultivation of the Cyclamen," by Mr. A. Hamshere, jun., of Beau Manor Gardens. The essayist lucidly described the details of cultivation by referring to seed-sowing and potting the plants, and the necessary treatment subsequently, stating that the plants should flower in about fifteen to eighteen months from the date when the seed is sown.

The room was made very bright and attractive by a display of Chrysanthemum blooms, set up by Messrs. SMITH & SON, Derby Road Nurseries. They had ten dozen Japanese blooms in forty varieties, and thirty-six incurved blooms in twenty-four varieties. Mr. H. WEEKS, of Thrumpton Hall Gardens, staged a fine exhibit of twelve blooms of his own seedling varieties. Mr. Reynolds, gr. to W. B. PAGER, Esq., exhibited four pots of Chrysanthemum Mons. C. de Leché, late-struck plants.

GREAT YARMOUTH CHRYSANTHEMUM.

NOVEMBER 15, 16.—The eleventh exhibition of this flourishing Society was held in the Drill Hall on the above dates, the exhibits of specimen plants and cut blooms fully maintaining the high quality hitherto obtained by this Society. Good and not over-trained plants were forthcoming in numbers sufficient to make a bank on both sides of the hall.

With six plants of Japanese, Mr. JAMES SUTTON, Telegraph House, Yarmouth, was 1st, with well-flowered specimens; 2nd, Mr. FOULSHAM; and for six incurved plants, Dr. DUDLEY was 1st; 2nd, Mr. SUTTON. Dr. DUDLEY was also 1st for three very fine plants of single-flowered varieties, and for three reflexed.

The principal class for cut blooms was that for thirty-six Japanese, distinct varieties, and of these there were five exhibits, Mr. HANSON, gr. to Sir SAVILE CROSSLEY, Somerleyton, Lowestoft, winning the 1st place somewhat easily with good stands of large and fresh flowers.

For twenty-four Japanese blooms, H. S. H. LACOW, Esq., Ormesby Hall (gr. Mr. Topham), was 1st, with a stand of bright flowers; 2nd, Mr. W. R. SEAGO.

For a similar number, open only to those residing within the borough of Great Yarmouth, and for which a handsome Silver Cup was offered by the Corporation for the 1st prize, the competition was keen. The Cup was won by Mr. SUTTON with an excellent stand of blooms.

A fine stand of twelve varieties from Mr. Atkinson, gr. to E. S. TRAFFORD, Esq., Wroxham Hall, Norwich, was easily 1st; and this exhibitor was also to the fore with a similar number of incurved varieties.

Mr. Topham, gr. to H. S. H. LACOW, Esq., was 1st with twenty-four incurveds in a strong competition; 2nd, Mr. HANSON.

Reflexed, Anemone, and single-flowered varieties were also contributed by numerous exhibitors. A grand stand of six blooms of one variety (Japanese) was staged by Mr. W. SEAGO, the variety being Mrs. J. Lewis.

Fruit was shown well by many exhibitors, as also were miscellaneous plants and floral decorations; while quite a feature of the exhibition was the wonderfully fine vegetables staged in ten classes for special prizes offered by Messrs. I. BRUNNING & Co., of Yarmouth. The last-named firm also contributed largely with non-competitive exhibits of Chrysanthemums and miscellaneous plants.

THE CHESTER PAXTON FRUIT AND CHRYSANTHEMUM.

NOVEMBER 15, 16.—The Chester Paxton Society's annual show of fruit and Chrysanthemums was held on the above dates in the Assembly Room of the Town Hall. Since its establishment nine years or so ago the Paxton Society has so stimulated the enthusiasm of local horticulturists that there has been as a consequence a wonderful improvement in the culture of fruit and Chrysanthemums, until at the present time the standard of quality in both fruit and flowers approaches perfection.

The advance in local fruit-growing is demonstrated by the fact that whereas at previous shows the prizes largely went to North Wales, this year they were almost entirely awarded to exhibitors in the locality. The entries of both fruit and Chrysanthemums exceeded those of former exhibitions. Last year about 1000 dishes of fruit were shown, but at this show there were over 1800 dishes.

The most striking of the floral exhibits were groups of Chrysanthemums arranged for effect in the centre of the room. Mr. J. WYNN FROULKES, of Upper Northgate House, has carried off the prize in this section during the past two years, but on this occasion he had to give place to Mrs. HUDSON, Bache Hall (gr. Mr. Stubbs), whose exhibits for wealth of bloom and tasteful arrangement left nothing to be desired.

Competition was keen in the section for cut Chrysanthemum blooms. The principal prize was for the best twelve cut blooms of distinct Japanese varieties; and out of fifteen competitors, the 1st and 2nd prizes were secured by Mr. F. A. POTTS, Horsley Hall, Gresford, and Lord TREVOR (gr. Mr. Dawes).

For the best-arranged eporgne of cut Chrysanthemums, Mr. T. BROCKLEBANK, Heswall, was placed 1st out of five entries; and Mrs. HUDSON 2nd. A new departure this year consisted in prizes for the premier blooms in the whole exhibition. In the Japanese blooms Lord TREVOR won champion honours, and carried off the Silver Medal with a beautiful specimen of the C. Harman Payne variety; while in the incurved blooms, Mr. J. TOMKINSON took the chief honours and the Silver Medal for an exquisite pale yellow Globe d'Or.

FRUIT.

The fruit section comprised some magnificent Apples, Pears, and Grapes. The Grapes were not quite so strong as a whole, but nevertheless some excellent bunches were shown. CHARLES WIGG, Esq., Hoole Bank, was to the fore for white bunches; EDWARD DIXON, Esq., Littleton Hall, and Sir GEORGE MEYRICK, Bart., taking 2nd and 3rd prizes. Mr. WIGG also took 1st prize for two bunches of black Grapes; while Mrs. POCHIN (gr. Mr. J. Sanderson), Bodnant Hall, occupied a similar position in the class for four black bunches. The class which excited most interest in the fruit section was that for fifty dishes of Apples, Mr. JOHN WATKINS, Wilmington, Hereford, carrying off first honours against four other competitors.

In the class for that old favourite and queen of dessert Apples, Ribston Pippin, there were twenty-five competitors, and it was pleasing to note that the 1st and 2nd prizes were carried off by local exhibitors in the respective persons of the Rev. L. GARNETT, Christleton Rectory, and E. DIXON, Esq., Littleton. In the class for Cox's Orange Pippin, Mrs. TOWNSEND-INGE, of Christleton Hall, took 1st prize. In the other classes for dessert Apples, the chief winners were Mrs. C. DAY, Rowton; Mrs. POCHIN, and Lord DELAMERE.

In the class for six separate dishes of dessert Apples, the Rev. L. GARNETT carried off the 1st honours; and Mr. B. C. ROBERTS was 2nd.

The class for twelve dishes of kitchen Apples drew an entry of eight, against three last year; Lord COMBERMERE took the 1st prize, and Mrs. POCHIN the 2nd.

No fewer than twenty competitors entered some of the classes for single dishes of kitchen Apples, and many of the exhibits were of great excellence. Excellent dishes of Alfriston, Blenheim Orange, Lane's Prince Albert, and other sorts were also shown.

Close upon sixty competitors entered the classes for dessert Pears, and here, as in previous years, local growers were well to the front. Mrs. AMBROSE DIXON, Christleton Bank, took 1st prize for the Marie Louise variety, and the Rev. L. GARNETT gained similar honours with a magnificent dish of Pitmaston Duchess, and also with his entry of Doyenné du Comice.

The Duke of WESTMINSTER sent, not for competition, by his head gardener, Mr. N. Barnes, a splendid collection of hardy and indoor fruits, consisting of Melons, Grapes, Apples, Pears, the table on which they were displayed being beautifully set off by Crotons, cut blooms of Chrysanthemums, Hyacinths, Violets, Cyclamens, &c. The judges unanimously awarded it a Silver Medal.

Messrs. DICKSON sent, not for competition, a beautiful collection of choice greenhouse-plants, consisting of Palms, Bamboos, and Chrysanthemums, which were tastefully arranged at the lower end of the room. They also made a capital display of hardy fruits from the nurseries.

BRIGHTON.

NOVEMBER 15, 16.—This was a good show, and if some of the fruit and cut flowers were not quite so excellent as they have sometimes been here, there were no really bad ones. The arrangements are always good at the Dome and Corn Exchange, and with such an experienced committee and secretary, Brighton show is likely to continue to be successful.

The best groups of plants came from Mr. G. MILES, Dyke Road Nursery; Mr. ANDERSON, and Mr. HEAD, The Drive Nursery, who secured 1st honours in their respective classes. Cyclamens were very good, especially those from Messrs. W. MILES & Co., Church Road, Hove.

Another special feature were vases of Chrysanthemums only. Mr. H. HEAD was 1st in the class for three vases, five flowers in each.

The cut flowers were not so good as usual. Some of the best were found in a stand from Mr. G. PIGOTT, 37, Trafalgar Street, who won the Challenge Trophy for flowers grown within three miles of the Pavilion.

Tables of cut flowers and foliage plants brought good competition, and here Mr. G. MILES, Dyke Road Nursery, just got ahead of Mr. H. HEAD, from The Drive Nursery.

Specimen blooms were poor; the two best came from Mr. Harris, gr. to Colonel HENTY, Arundel, and the next best from J. HICKSON, gr. to F. SLATER, Esq., Newick.

A grand non-competitive exhibit from Messrs. BALCHIN & SONS, Hove and Hassocks, gained the Society's special Gold Medal.

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 15, 16.—The horticultural society in the city of Winchester may be congratulated on the fine autumn exhibition held in the Guildhall, it being much the best of the sixteen preceding ones. The cut blooms were of exceptional merit, and the plants, fruit, and vegetables likewise.

Plants.—Groups of Chrysanthemums were a strong feature. Mr. G. H. STREET, gr. to Rev. Dr. FEARON, The College, Winchester, was awarded the premier prize for an exhibit, good in every respect.

Instead of offering prizes for huge trained specimen plants, the committee encourage the growth of decorative plants. For eight plants, there was keen competition. Mr. G. COUSINS, gr. to E. H. BUCKLAND, Esq., Kingsmead, Winchester, won the leading prize with suitable examples. Mr. H. GRIGG, gr. to Rev. MOORSON, Holyrood, Winchester, had the best six white and six yellow-flowered varieties.

Groups of miscellaneous plants were very well shown, Mr. Carr, gr. to W. A. GILLET, Esq., Fair Oak Lodge, Bishopstoke, winning the leading prize with a tastefully-executed group, mainly of seasonable Orchids.

Cut Blooms.—Forty-eight distinct varieties, half Japanese and the remainder incurveds, formed the principal class, and produced keen competition. Mr. NEVILLE, gr. to F. W. FLIGHT, Esq., Twyford, Winchester, was an easy winner, with a remarkable stand of incurved blooms, and good specimens of Japanese. Mr. J. WASELEY, gr. to F. B. TAYLOR, Esq., Sheffield Manor, Basingstoke, won the premier award for twenty-four Japanese blooms. Mr. NEVILLE won the 1st prize for twelve incurveds in four varieties, three blooms of each, and also for twelve varieties in both classes, staging creditably.

An interesting class was that for twelve Japanese blooms in four varieties, three blooms of each, all to be white-flowered kinds. Mr. J. WASELEY was 1st with a pleasing exhibit of such varieties as Mutual Friend and Simplicity. In a similar class for twelve yellow or bronze flowering, Mr. WASELEY again secured the leading award.

Non-competitive Exhibits were not numerous. Messrs. E. HILLIER & SON staged a nice collection of Apples, and Messrs. JARMAN had a somewhat smaller exhibit. Mr. N. MOLYNEUX, Rooksbury Park, Fareham, had a number of blooms of seedling varieties of Chrysanthemums.

RUGBY AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 15, 17.—The twelfth annual exhibition was held on the above dates, and was a great improvement upon previous ones. The cut blooms were very fine, especially those from ARTHUR JAMES, Esq. (gr. A. Chandler), Cotton House, Rugby, which were among the best we have seen staged this season.

PLANTS AND GROUPS.

For a group of Chrysanthemums arranged with Ferns, foliage plants, and Primulas for effect, Mr. BENNETT (gr. Mr. Wayman), The Firs, Rugby, was 1st, with a circular group, having a plant of Cocos Weddelliana in the centre, with Chrysanthemums, Cordylines, Ferns, Ophiopogons, &c.

The local group class was won by Mr. CALDICOTT (gr. Mr. Robinson), The Lodge, Rugby, who had a semi circular arrangement of some merit.

For four Chrysanthemum plants of distinct varieties, Mr. CALDICOTT was again 1st, with specimens of Source d'Or, Vivand Morel, Edwin Becket, and Chas. Davis.

Two competitors staged for the prize for twelve Primulas (open), ARTHUR JAMES, Esq., Cotton House, Rugby (gr. Mr. A. Chandler), being a good 1st, with well-grown, fresh plants of the old double white variety, full of bloom.

CUT BLOOMS.

There were three competitors for twenty-four Japanese (distinct), but ARTHUR JAMES, Esq., Cotton House, Rugby (gr. Mr. A. Chandler), was an easy 1st, having some magnificent blooms, the only weak one being a specimen of Mons. Hoste. The collection included Mr. J. Burks, Mrs. W. Mease, Lady Ridgway, Mons. Chenon de Leché, and W. Wright. The 2nd place was occupied by S. SODER, Esq., Floore House, Wedon (gr. Mr. W. Pearce).

ARTHUR JAMES, Esq., was again 1st for eighteen Japanese blooms, and for twelve Japanese blooms.

For twelve incurved also, ARTHUR JAMES, Esq., was 1st having a beautiful and even lot of flowers.

For twelve Japanese blooms (local), E. EDWARDS, Esq., Horton Crescent, Rugby (gr. Mr. Mackay), was 1st, and showed creditably.

FRUIT AND VEGETABLES.

Fruit was very good, especially the Grapes. For two bunches of Grapes, ARTHUR JAMES, Esq., was 1st, with two even, well-coloured bunches of Muscat of Alexandria; and A. P. MUNTZ, Esq., Dunsmore, Rugby (gr. Mr. Blackenway), was 2nd with Black Alicante.

For four dishes of Apples (Dessert), The Earl of DENBIGH, Newham Paddox, Lutterworth (gr., Mr. W. Harrison), was 1st, with good examples; and Mr. PEARCE was 2nd. The Earl of DENBIGH had also the best collection of four dishes of culinary varieties.

Lord SPENCER, Althorp Park, Northampton (gr., Mr. Coles), led the way for four dishes of Pears, and staged capital specimens.

The best collection of eight varieties of vegetables was from the Earl SPENCER; and P. A. MUNTZ, Esq. (gr., Mr. Blakenway), was 2nd.

MISCELLANEOUS EXHIBITS.

For table-decoration, Mr. ROBINSON, Farm Cottage, Rugby, was placed 1st.

A stand was erected for the sale of fruit and flowers, in aid of the Gardeners' Orphan Fund, and a sum of £7 was thus obtained.

Messrs. B. HURST & SON, nurserymen, Hinckley, had about forty dishes of well-grown Apples. H. K.

LEEDS PAXTON SOCIETY.

NOVEMBER 15, 16.—The annual show of this Society was held in the Victoria Hall, Leeds, on the above dates. The following were the chief awards made to a number of excellent exhibits, among which the groups of Messrs. TOWNSEND and PETTINGER were exceptionally fine.

GROUPS (OPEN).

For a miscellaneous group, Orchids being allowed, E. B. FABER, Esq., Belvedere, Harrogate (gr., Mr. Townsend), was 1st, with a very choice and tastefully-arranged group, including in the foreground some very nice Orchids, including some fine spikes of *Oncidium varicosum* Rogersii, the chief attraction of the group; 2nd, J. C. GOODALL, Esq., Pudsey, near Leeds; 3rd, Sir JAS. KITSON, Bart. (gr., Mr. Grix); the latter was exceedingly light and graceful, and seemed to be generally considered an easy 2nd.

Group of Chrysanthemums, 1st, Mr. J. PETTINGER, Harrogate, with a grand lot of plants, furnished with fine large flowers, and the group was nicely arranged; Mrs. TETLEY, Fox Hill, Westwood (gr., Mr. J. Eastwood), was the winner of the 2nd prize.

OPEN CLASS.

For twenty-four Chrysanthemum blooms, incurved, the Earl of HARRINGTON, Elvaston Castle (gr., Mr. J. Goodacre), was 1st, with a stand consisting of very fine flowers.

In the next largest class, that for twenty-four Japanese, in not fewer than eighteen distinct varieties, R. A. BOWRING, Esq., The Heath, Cardiff (gr., Mr. Joy), was 1st; this was a fine exhibit, and included grand blooms. The Earl of HARRINGTON's gardener was 2nd, as he was likewise for twelve incurved; whilst Mrs. WHITTAKER, The Cliffe, Hesse, was 2nd.

P. CLARK, Esq., Rodley, Leeds, had the best twelve Japanese, distinct; and Mrs. MASON, Bankfield, Bingley, the 2nd best.

The best basket of Chrysanthemums, with foliage, came from Mrs. WHITTAKER, Cliffe, Hesse.

The remainder of the exhibits consisted of a number of minor classes, in which the Chrysanthemum in various sections figured; table plants, Roman Hyacinths, Grapes, both black and white varieties; and non-competitive ones, from Messrs. HARKNESS, of Bedale; and R. P. K&R & SONS, Liverpool.

WARGRAVE AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

NOVEMBER 16.—A fortnightly meeting of the above Society was held on Wednesday evening, November 16, but owing to counter attractions, the attendance was smaller than usual.

Mr. W. POPE presided, and read a paper on Calanthes. He confined his remarks to the deciduous species, and gave full cultural directions for their successful growth. A vote of thanks was accorded to Mr. Pope for his instructive paper. A discussion took place on Calanthes generally, and the group exhibited by the chairman was much admired. It consisted of *C. Veitchii*, *C. vestita rubro-oculata*, and *C. vestita lutea oculata*. A number of cut blooms of Chrysanthemums was also staged. H. Coleby, Hon. Sec.

TEIGNMOUTH GARDENERS' MUTUAL IMPROVEMENT.

NOVEMBER 16.—The annual exhibition was held in the Assembly Rooms, and was in every respect a very satisfactory show.

In the class for twelve Japanese and twelve incurved the competition was keen, the blooms being fresh, large, and full. The 1st prize was awarded to H. HAMMOND SPENCER, Esq. (gr., Mr. G. Foster). For Japanese blooms distinct, J. PHILIPS, Esq. (gr., E. Atkins), was 1st with a stand of very fine blooms. For nine specimen blooms, cut with not less than 12 inches of stem and foliage to be shown, three blooms in a vase, H. HAMMOND SPENCER was 1st.

Groups were good, the premier position being secured in one class by J. PHILIPS, Esq., whose plants were not more than 4 feet high, but the flowers were large and bright, and the foliage clean. In another class for groups arranged in a circle 7 feet in diameter, Mrs. PARSONS (gr., Mr. J. Beer) was placed 1st. With six blooms of one variety, H. HAMMOND SPENCER was again well to the fore with grand blooms of G. J. WARREN.

There were numerous additional classes for cut blooms, and they were well contested. The beauty of the incurveds being specially noticeable.

Primulas and table plants were good, but not so numerous as in previous years.

For a collection of twelve sorts of Apples, six dessert and six culinary, Mrs. ELMS was 1st, there being several other good exhibits of Apples and Pears. Vegetables in collections were of good average quality.

HULL CHRYSANTHEMUM.

NOVEMBER 16, 17.—This Chrysanthemum Society held the best exhibition it has had in the Artillery Barracks of this town on the dates named. Both in groups and cut blooms there was a marked improvement on former years.

Cut Blooms formed a prominent feature, being shown in quantity, and of great merit.

For twenty-four incurved, in not fewer than eighteen varieties, there was a grand display, and Mr. G. CROOKES, gr. to Lady HINDLIP, Hadsor House, Droitwich, took the premier position somewhat easily with a magnificent collection; and Mr. W. MEASE, gr. to A. TATE, Esq., Downside, Leatherhead, was a good 2nd.

For eighteen incurved varieties, Mr. P. WALKER, gr. to Colonel CLITHEROW Hotham House, Brough, was decidedly a good 1st: the Japanese blooms were much admired; and in the class for twenty-four, Mr. MEASE was placed 1st with grandly-developed examples; and Mr. J. P. LEADBETTER, gr. to A. WILSON, Esq., Tranby Croft, Hull, took the 2nd place.

In the class for eighteen, Mr. J. BACKHOUSE occupied the leading position; and in the class for twelve, Mr. J. DOWN was 1st, both cultivators showing very creditably.

For six blooms, any one variety, Mr. T. WALKER, with M. Chenon de Leche, was 1st in a stiff competition.

Anemone-flowered varieties were so well shown, that they deserve a special mention, Mr. F. MASON, Hesse, winning the 1st place with a number of full-centred blooms of W. W. Astor, Sir W. Raleigh, Queen Elizabeth, and Enterprise.

Single-flowered varieties were capitally represented by Mr. Waterhouse in the twelve-bunch class.

Groups of Chrysanthemums and Foliage Plants were meritorious, and the principal award—a Silver Challenge Vase and a money prize—was taken by Mr. G. Wilson, gr. to Sir J. RECKITT, Bart., Swarland Manor, Brough, with a group which left little to be desired; Mr. G. Jarvis, gr. to Mrs. WHITTAKER, Cliffe House, Hesse, being the winner of the next best.

Mr. J. W. WILSON was 1st in the class for a group of miscellaneous plants. Decorated mirrors formed a special feature at this show, and the exhibit of Mr. G. C. COATES, gr. to W. WHEATLEY, Arlaby Road, Hull, was adjudged the best in design, and that of Mr. LEADBETTER the next best.

Plants were staged numerous and well. For three specimens Mr. H. THOMPSON, gr. to C. J. RINGROSE, Esq., Cottingham Grange, Hull, was far ahead of others, with profusely-flowered examples of the Rundle type of Chrysanthemum. Standard-trained plants were equally finely shown, each plant in the winning group carrying four dozen shapely blossoms, and here Mr. Thompson secured the highest award.

"Cut-back" plants, so useful for conservatory decoration, form a feature of the show, and for six of them Mr. J. BACKHOUSE was 1st, with plants having abundant foliage and fully developed blooms, of such varieties as Mutual Friend, Charles Davis, Vivian Morel, and Phœbus.

BRISTOL CHRYSANTHEMUM.

NOVEMBER 16, 17, 18.—In consequence of the recent destruction of a portion of Colston Hall by fire, this society held its twenty-fifth exhibition in the spacious Drill Hall. The exhibits, generally, were of much merit; although the exhibits in the chief classes for cut blooms were not so numerous as previously. Groups of plants were good, and fruit and collections of vegetables better than usually seen at Bristol.

PLANTS.

The best group of Chrysanthemum plants among four exhibitors came from J. DOLE, Esq. (gr., Mr. J. Marshall), who had a capital exhibit; the 2nd prize being won by J. C. GODWIN, Esq. (gr., Mr. G. McCulloch).

In the class for Chrysanthemums, arranged with ornamental foliage plants, there were three nice exhibits, the best being from H. ST. VINCENT AMES, Esq. (gr., Mr. W. H. Bannister); W. E. GEORGE, Esq. (gr., Mr. A. Ross), was 2nd.

There were only two exhibitors in the class for a group of miscellaneous plants. J. SANDERS, Esq. (gr., Mr. Newberry), was 1st with a bright, tastefully-arranged group of plants, consisting chiefly of *Cattleyas*, *Cypripediums*, *Dendrobiums*, *Oncidium*, *Palms*, and *Codiaeums*, edged with *Adiantum* Fern.

Cut Blooms.—For thirty-six blooms, Japanese, in not fewer than twenty-four varieties, the society's challenge vase and 1st prize was won by Mr. G. W. DRAKE, Cardiff, who had a collection of large, full blooms. His leading varieties were: Mrs. J. Lewis (a grand flower, which was awarded the National Chrysanthemum Society's Silver Medal, being the best bloom in the show), Miss M. Molyneux, G. J. Warren, and M. Chenon de Leche (two blooms). 2nd, R. WHITEHEAD, Esq. There were seven exhibitors.

The best collection of twenty-four blooms, incurved, was from Sir C. E. G. PHILLIPS, Bt., Picton Castle, Haverfordwest (gr., Mr. J. Dumble), who had remarkably good and

even flowers. Amongst his best were: Madame Ferlat; Lady Isabel, Miss D. Foster, C. H. Curtis, Queen of England, Middle L. Faure, Bonnie Dundee, Globe d'Or, and Golden Empress. 2nd, R. WHITEHEAD, Esq. (gr., Mr. Runnacles).

Twelve blooms, Japanese, were best from Mrs. H. A. SMITH, Chepstow (gr., Mr. H. Baker); 2nd, Mr. H. A. ALLEN, Penarth. And the best collection of twelve incurveds were also from Mrs. H. A. SMITH.

Twenty-four blooms, Japanese, eight distinct varieties, three of each, arranged with foliage of any kind, in a space 4 feet by 3 feet. W. PETHICK, Esq. (gr., Mr. S. W. E. Hack), was 1st in this class, and showed good blooms of leading varieties, intermixed with sprays of *Asparagus*, *Codiaeums*, and fronds of Ferns; 2nd, J. DOLE, Esq. R. WHITEHEAD, Esq., had the best dozen blooms of a Japanese variety, showing Madame Carnot.

For six Japanese blooms, distinct, of varieties sent out in 1897 or 1898, Lady T. GUEST (gr., Mr. Wilkins) was 1st, showing Lady Ridgway, Louis Bechmer, N. C. S. Jubilee, Vicomte Roger de Chezelles, and Lady Hanham; 2nd, Mr. DRAKE.

FRUIT.

Twenty classes were devoted to fruit, which chiefly consisted of Grapes, Apples, and Pears. There was spirited competition in most of these. The best collection of fruit (six dishes) was from Mr. WILKINS, who had good Muscat and Gros Maroc Grapes, King of the Pippins Apple, and Pit-maston Duchess Pears; Mr. Warren, gr. to T. JONES, Esq., Bath, was 2nd.

Eight bunches of Grapes, in not fewer than four varieties. The chief prize in this class consisted of £5 and the Veitch Memorial Medal, and was deservedly awarded to Mr. Coote, gr. to D. E. TAYLOR, Esq., Marshfield, for a very good exhibit. Mr. COOTE, with Muscat of Alexandria, also in this class, won a special prize for the best bunch of Grapes in the show. 2nd, Mr. W. Taylor, gr. to C. BAYER, Esq., Streatham.

The best collection of six dishes of dessert Apples was from Mr. G. RUNNACLES; Mr. BANNISTER being a good 2nd. For six dishes (culinary) Mr. Aplin, gr. to W. NEATH BAKER, Esq., Gloucester, was first; 2nd, Mr. Fewtrell, gr. to C. C. TUGWAY, Esq.

Mr. BANNISTER had the best Pears; and Mr. FARMER, Tewkesbury, was 2nd.

VEGETABLES.

The collections of these were of very high quality, the following being prominent exhibitors, viz., Messrs. W. L. BASTIN, who secured a Gold Medal; J. HALL, WELLS, BANNISTER, A. ROSS, G. SUTTON, J. McCULLOCK, and E. BENFIELD.

Non-competitive Exhibits.—Messrs. GARRAWAY & Co., Durdan Down Nurseries, staged sixty dishes of excellent Apples; Messrs. PARKER & Sons, St. Michael's Hill Nursery, and Mr. CHAS. WINSTONE, florist, Bristol, each had splendid displays of wreaths, bouquets, sprays, &c.; and Messrs. JAS. CARTER & Co., London, exhibited a stand of seeds and vegetables. T. C.

ANCIENT SOCIETY OF YORK FLORISTS.

NOVEMBER 16, 17, 18.—The nineteenth annual autumn show of the Ancient Society of York Florists was held in the large Exhibition Building at York, and was a great success.

PLANTS.

Groups.—The groups, although not so numerous as in former years, were of good quality. For group of Chrysanthemums, interspersed with foliage plants, the best exhibitor was J. T. KINGSTON, Esq., Clifton, York (gr., Mr. R. McIntosh); 2nd, Mrs. GURNEY PEASE, Darlington (gr., Mr. McIntyre).

The best group of Chrysanthemums, not exceeding 100 square feet, was from J. W. HEILDS, Esq., Acomb, whose group was of great merit, and included some excellent blooms of the best varieties.

Specimen Plants.—Four Chrysanthemums, incurved, 1st, Mrs. GUTCH, Holgate (gr., Mr. Everard). This exhibit included a splendid plant of C. H. Curtis.

Four Japanese distinct, 1st, Mrs. GUTCH, Holgate, who showed a fine plant of a variety named Mrs. Gutch, a sport from Val d'Andorre.

Cut Blooms.—For thirty-six blooms, eighteen Japanese and eighteen incurved, 1st, A. WILSON, Esq., Tranby Croft (gr., Mr. Leadbetter), who staged a splendid lot. 2nd, Earl of HARRINGTON, Elvaston Castle (gr., Mr. J. Goodacre).

The best collection of twelve Japanese distinct was from the Earl of FEVERSHAM, Duncombe Park, Helmsley (gr., Mr. Williams).

For a collection of eighteen cut-blooms distinct, Major O. V. LUMLEY, Clifton, York (gr., R. Agar), was 1st.

The best Japanese variety shown in sixes, was Eva Knowles from Lord FEVERSHAM; and the best yellow Japanese was Edith Tabor from the same exhibitor.

FRUIT.

The best six bunches of Grapes were from Lord BARNARD, Raby Castle (gr., Mr. J. Tullett), who had two bunches of Barbarossa, 10 lb. each, also Black Alicante, and Royal Vineyard; Earl of HARRINGTON, 2nd.

Lord HOTHAM had the best two bunches of Black Grapes, and the best White Grapes.

In the class for a collection of dessert fruit, to consist of two varieties of Grapes, two varieties of Apples, and two varieties Pears, Lord BARNARD was 1st; Sir J. W. PEASE, Bart., Hutton Hall (gr., Mr. McIndoe), 2nd.

The best collection of fruit of sixteen dishes of culinary Apples, eight dishes of dessert Apples, and twelve dishes of Pears. Some very excellent quality was evident in the exhibits staged, both Apples and Pears being of first-rate size and colour for northern-grown samples. 1st, Sir J. W. PEASE, Bt.; 2nd, Earl of HARRINGTON.

Sir JOSEPH W. PEASE, Bart., had the best six dishes of dessert Apples; and J. R. PEASE, Esq., Hesslewood House, Hessle (gr., Mr. Picker), was 2nd. Sir J. W. PEASE had also the best twelve varieties of Apples (six fruits of each).

The best six dishes of culinary varieties were from W. HUTCHINSON KIRBY, Esq., Moorside; and the best six dishes of Apples (dessert) from Sir J. W. PEASE.

Six dishes of Pears, distinct were best from Lord HOTHAM.

VEGETABLES.

There is always a remarkable show of vegetables at this show. For a collection of vegetables, home-grown, arranged for effect, space 6 feet by 4 feet: 1st, G. EXELBY, Esq., Holgate, York, a very excellent arrangement; 2nd, R. BELL, Esq., Haxby, York. The above are the principal classes only in the various sections.

Non-competitive Exhibits.—Messrs. JAS. BACKHOUSE & SON, Ltd., decorated the orchestra with fine specimen Conifers and other shrubs. The same firm exhibited upwards of 100 varieties of Apples.

Messrs. SUTTON & SON, Reading, had a fine stand of Cyclamen plants in bloom.

Messrs. CLIBRAN & SON, Altrincham, showed new Chrysanthemums and decorative plants.

ROYAL BOTANICAL, MANCHESTER.

NOVEMBER 17, 18, 19.—An excellent show in connection with the above Society was held in St. James' Hall, Manchester, on the above dates.

In all classes the exhibits were plentiful and of much merit, especially the cut flowers shown in the stands of forty-eight varieties. In this class a valuable Silver Cup was offered by the Earl of DERBY, in addition to a considerable money prize. There were five competitors. A fine group of Chrysanthemums and large Palms from the Society's gardens at Old Trafford were arranged along the middle area of the Hall, and measured 100 yards in circumference. It contained specimen blooms of all the best varieties, and reflected great credit on Mr. P. WEATHERS and his staff of assistants.

Cut Blooms.—Twenty-four incurved, in twelve varieties.—Here the Dowager Lady HINDLE, Hadsor House, Droitwich (gr., Mr. Crook), was 1st, the finest varieties being Egyptian, Madame Ferlat, Wm. Tunnington, C. H. Curtis, Jeanne d'Arc, Mlle. Lucie Faure, Mrs. Coleman. E. BEHRENS, Esq., Bettisfield Park, Whitchurch, Salop (gr., Mr. H. West), was 2nd.

The best twelve incurved blooms were those shown by Messrs. FOSTER, The Nurseries, Lavant, the best blooms being Dorothy Foster, M. G. Ferlat, C. H. Curtis, Golden Empress, Ma Perfection, Duchess of Fife, Countess of Warwick. Dowager Lady HINDLE was 2nd.

The best thirty-six Japanese blooms in eighteen varieties were shown by F. VALLIS, Fruit Farm, Bromham, Chippenham, who was 1st with popular varieties; and the 2nd prize fell to E. BEHRENS, Esq., Bettisfield Park.

The best forty-eight blooms, twenty-four Japanese and twenty-four incurved, distinct, constituted a strong class, for there were seven entries, and Mr. W. H. LEES, gr., Trent Park, New Barnet, was 1st, with a magnificent exhibit, well shown. Mr. GOODACRE, of Elvaston Castle, Derby, was 2nd, with almost equally fine blooms.

Eighteen Japanese blooms, in nine varieties, were well shown by Mr. W. H. LEES, who was 1st; and by R. A. BOWRING, Esq., The Heath, Cardiff (gr., Mr. Joy), who was 2nd.

The finest twelve Japanese varieties, distinct, were those shown by C. WATERHOUSE, Esq., Prastbury; and Mr. F. VALLIS, Fruit Farm, Bromham, Chippenham.

For thirty-six miscellaneous varieties, Mr. T. BROCKLEBANK, gr., The Hollies, Woolton, was 1st; and J. LAMBRA, Esq., Kenwood, Bowdon, was 2nd.

Groups and Specimen Plants.—These consisted of Chrysanthemums, set off by foliage plants, in a space of 80 square feet, T. HARDCASTLE SYKES, Esq., Cringle, Cheadle (gr., Mr. Roderick), taking the leading prize with a tastefully arranged lot of plants, including several very brightly-coloured Codiums; the 2nd prize fell to JAS. WALTON, Esq., Woodlands, Newton Heath (gr., Mr. Horrock).

G. H. GADDUM, Esq., Aditt House, Didsbury (gr., Mr. Bradburn), was the winner in the class for nine large-flowered Chrysanthemums in pots. He staged grand specimens of C. H. Curtis, Duchess of Fife, and Charles Davis; THOS. HARKER, Esq., Brook House, Withington, took the 2nd prize.

The best six Japanese plants, grown in pots, were shown by G. H. GADDUM, Esq.; and THOS. HARKER, Esq., of Withington, 2nd.

Besides Chrysanthemums there were exhibits of cut-flowers of a miscellaneous character, and of Orchid-blossoms. Plants of Primulas, Cyclamens, and table-plants. The trade, in the persons of Messrs. J. CYPHER & SON, CANNELL & SONS, JOHN ROBSON, of Bowdon, Messrs. DICKSON & ROBINSON, and DICKSON & BROWN, contributed quantities of plants, cut-blossoms, &c., doing much towards adding to the effect as a whole.

SCOTTISH HORTICULTURAL.

EDINBURGH: NOVEMBER 17, 18, 19.—The exhibition, briefly alluded to in our telegram of last issue, was one of the finest yet held by this Society in the autumn. The locality was the Waverley Market. As many as 4000 cut blooms were staged, which is much in excess of former years; and the plants, too, showed improvement, owing, perhaps, to the increase of the money-prizes in the classes for plants. Nowhere else in this country can there be witnessed such a grand display of Japanese Chrysanthemums, arranged with their own foliage in vases, as here. This is a departure from the orthodox method, which might be followed by other societies with a gain in the attractiveness of their shows.

CUT BLOOMS.

The principal class was one for twenty varieties in triplets, Chrysanthemum foliage only being employed. A piece of plate, value £20, with £15 in cash, was offered as the premier award, and the competitors numbered six. Mr. T. LUNT, gr. to A. STIRLING, Esq., Kier, Dunblane, was deservedly placed 1st, his blooms being grandly developed and suitably staged. We mention a few of the finer ones, viz., Oceana, Lady Ridgway, M. Chenon de Leché, Mrs. Weeks, Australian Gold, Mlle. M. A. de Gilbert, J. Bidencope, Mrs. J. Lewis, Eva Knowles, and Simplicity. Mr. D. NICOLL, gr. to J. W. BELL, Esq., Rossie, Forgandenny, was a creditable 2nd; Mr. A. Haggart, gr. to the Hon. LUCIUS O'BRIEN, Moor Park, Ludlow, was 3rd.

For twelve distinct varieties in triplets shown singly in vases, the competition was keen, and Mr. P. ADDISON, Blackhouse, Skelmorlie, took the premier award with excellent examples, M. Chenon de Leché, Pride of Exmouth, Lady Hanham, M. Gruyer, Phœbus, Charles Davis, and M. Pankoucke, were among the finest; Mr. D. NICOLL was a most creditable 2nd, with slightly smaller blooms, of almost identical varieties.

The best four vases, each to contain six blooms, there was keen rivalry, and Mr. D. MACKAY, Kingston Grange, was 1st with a creditable exhibit; and Mr. P. WHANNELL, The Drum, Gilmerton, 2nd.

In the class for the twelve Japanese blooms, arranged in one vase, Mr. ADDISON took leading honours, although his blooms were much crowded together owing to their size. For six blooms, any one variety, Mr. J. BIRD won with grand examples of Viviani Morel. Specified varieties, in stands of six blooms each, were numerous. Mr. ADDISON was 1st for Duchess of York, C. Davis, President Borel, and E. Molyneux, in all cases showing good representative specimens of each. The variety Edith Tabor was staged in grand condition by Mr. J. DAY, gr., Galloway House, Garliestown; as was also Mutual Friend by Mr. ARMSTRONG, of Musselburgh.

What are known as decorative varieties, that are not disbudded, had a special class provided for them, an exhibit to consist of three vases and three varieties; and as seventeen competitors entered the lists an attractive exhibit resulted. Mr. A. C. CAMERON, Benrock, Dundee, was 1st with well chosen varieties tastefully arranged with suitable autumn foliage; and Mr. G. CHAPLIN was 2nd. Single-flowered varieties receive encouragement; and for one vase of flowers of Mary Anderson Mr. A. CAMERON was 1st; and Mr. J. HOLMES, Winton Castle, was 2nd.

Provision was made for blooms staged in the orthodox manner on boards. It should, however, be admitted that, good as they were in point of quality, they lacked the fine effect produced by the blooms set up in vases.

For thirty-six distinct, one bloom of each, Mr. T. LUNT was here successful with popular varieties, and Mr. ADDISON was 2nd. Mr. T. LUNT was also 1st for twelve blooms, amongst thirteen competitors. Mr. J. H. COMINO, Grantully Castle, secured a similar place for six varieties.

Incurved varieties were indifferently staged. Mr. MARTIN was 1st for twelve, with fairly good examples, and likewise for six of C. H. Curtis. Mr. A. CAMERON was 1st for six varieties.

PLANTS.

These were certainly better shown than on any previous occasion, owing, as in the case of cut blooms, to the increase of the prize-money, viz., £10 as the highest prize for six specimens. Mr. J. THOMSON, Preston Grange, Prestonpans, was here 1st with a fine collection of plants, several of them being 5 feet in diameter, each with about 150 fair-sized blooms. Mr. D. CAVANAGH, St. Edwards, Murrayfield, was 2nd.

For four Japanese varieties, Mr. THOMSON was 1st, with evenly-flowered specimens. Poupous were freely flowered and not too formally trained, the best coming from Mr. J. MACPHERSON, Dunisla House, Edinburgh.

MISCELLANEOUS.

Epergnes, vases, and bouquets were well shown; many of the leading awards falling to the Misses TODD, Stoneybank, Musselburgh, who exhibited much good taste in their devices. Mr. A. E. TODD secured the leading award in the class for the best arranged circular table with cut flowers and small plants—a very commendable exhibit.

Fruit and vegetables were numerous, and of the usual fine quality seen at Edinburgh. Exhibits not for competition added to the interest of the show. Mr. JOHN DOWNIE, nurseryman, Edinburgh, contributed a beautiful collection of floral devices; Mr. T. FORTUNE, Edinburgh, made a somewhat similar contribution; and Messrs. DOBBIE, Rothesay, a collection of decorative Chrysanthemums, Apples, and Potatoes. The most commendable exhibit, however, was that from Mr. H. J. JONES, Ryecroft Nursery, Lewisham, who staged three dozen beautifully-flowered plants of Begonia Gloire de Lorraine, and twenty dozen Chrysanthemum blooms, several of which were Certificated.

BATLEY AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 19.—The thirteenth annual show of this Society was held in the Drill Hall on the above date. Competition was keen in all the classes, and especially so in the class for thirty-six cut blooms, for which there is offered a valuable Silver Cup, value £21.

The stands had to consist of eighteen Japanese and eighteen incurved, and the 1st prize fell to G. B. COCKBURN, Esq., Cloughton, Birkenhead (gr., Mr. G. Burdon); the 2nd to A. WILSON, Esq., Tranby Croft (gr., Mr. Leadbetter); and the 3rd to Mr. Cole, gr. to Earl SPENCER, Althorp, Northampton.

In the twelve Japanese, distinct, class, the Earl of HARRINGTON, Elvaston Castle (gr., Mr. Goodacre), was 1st; and G. B. COCKBURN, Esq., (gr., Mr. Burdon), 2nd.

For twelve incurved, G. R. COCKBURN, Esq., Cloughton (gr., Mr. Burdon), was 1st; and Mr. GOODACRE 2nd.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 21.—A meeting of the Floral Committee was held at the Royal Aquarium on the above date. There were fewer exhibits than on the previous occasion, but several very distinct and valuable novelties were submitted for Certificates. This honour was granted to the following varieties:—

MRS. BARKELEY (Japanese), a very large, smooth, somewhat reflexed flower, of a shade in pink or rose, being similar in colour when at its best to highly-coloured blooms of Viviani Morel. In some of the blooms many of the petals are silver-tinted. The petals are broad, flat, and do not taper, most of them ending bluntly, with a slight, wedge-shaped notch in centre. A most distinct and grand novelty, from Mr. H. Weeks, Thrumpton Hall Gardens, near Derby.

EDITH DASHWOOD (Japanese), a delicately-tinted flower, suggestive to some of Eda Prass. The petals are rather narrow, and taper almost to a point. From Mr. Weeks.

VICTORIA (single), a good sized flower, of canary-yellow colour, pretty in form, but with a very prominent disc. From Mr. G. W. Forbes, Regent House, Surbiton.

FLORIE (single), a finely formed flower, of rosy-pink, with a white band encircling the disc, a very charming variety shown by Mr. Forbes, who exhibited other very pretty varieties.

CHATSWORTH (Japanese).—This variety has already been seen in many important stands this season. Messrs. Cannell & Sons, Swanley, exhibited three very fine blooms on this occasion, in which the colour-stripes upon the florets were very finely developed, the tips incurving. This variety is among the prettiest of the smooth-typed Japanese. (H. Cannell & Sons.)

Mr. H. J. Jones exhibited blooms of a white Japanese Anemone, Mrs. C. R. DUNN; and Mr. Witty, Superintendent of Nunhead Cemetery, showed several decorative Japanese varieties, including GOLDEN SHOWER, and WHAT HO! blooms of which were shown on the last occasion. The plants now forthcoming were not sufficiently dwarf and strong in habit to satisfy the committee of the usefulness of the varieties for decorative purposes.

Mr. N. Molyneux, Rooksbury Park Gardens, Fareham, showed blooms of three incurved varieties—GOLDEN GEM, a yellow one; Earl of CRAWFORD, purple; and NELLIE S. THREEFALL, white.

Mr. Weeks had about three dozen fine blooms of English-raised novelties, of which the best were the following:—Miss MAUD DOUGLAS, an incurving Japanese, pale purple, silver reverse; ANNIE PREVOST, a reddish-purple Japanese, a little rough as shown; J. A. BAXTER, a moderately sized pink Japanese; LITTLE NELL, a white Japanese, with lemon centre.

Mr. W. Wells showed a single-flowered variety, a white sport from DAISY BRETT. The sport has wider, flatter petals, and is pure white; also a red coloured single variety, named Mrs. BAILLIE; and HERBERT HENDERSON, a shaded single-flower, white and pale purple.

SHIRLEY & DISTRICT GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT ASSOCIATION.

NOVEMBER 21.—The monthly meeting of the above Society was held at the Parish-room, Shirley, Southampton, on Monday last, when there was more than an average attendance of the members, the President, W. F. G. SPRANGER, Esq., presiding. The lecture was under the auspices of the Technical Education Act Committee, Southampton County Council, and was given by Mr. E. T. MELLOR, B.Sc., London, Lecturer in Biology at the Hartley College, Southampton, and was the first of two, the subject being "The Soil."

The lecturer dealt with his subject in three parts—(1) The Origin and Formation of Soils; (2) Composition of Soils; (3) Nutritive and other Constituents of Soils.

Each part was profusely illustrated by means of lantern-slides, chemical experiments, and diagrams, and was thus made most interesting as well as instructive.

Next month the lecturer will deal with the chemical aspect of the subject in his second lecture.

At the close of the lecture, a number of interesting ques-

tions were put to the lecturer, who replied to each one in a satisfactory manner.

There was a very good exhibition of Chrysanthemums, both plants and blooms, contributed by the members, but a number of First-class Certificates were awarded the exhibitors.

Cordial votes of thanks to Mr. Mellor, to the President, and to the exhibitors, terminated a very pleasant meeting.
H. J. Hobby, Secretary.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (-) the Mean for the week ending November 19.	ACCUMULATED.				(More +) or less (-) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 2, 1898.	Below 42°, difference from Mean since January 2, 1898.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		Ins.			
0	4 +	84	6	+ 328	- 274	9	222	51.7	20	29
1	5 +	33	11	+ 228	- 274	6	173	25.0	22	31
2	6 +	42	0	+ 345	- 255	4	151	18.4	6	29
3	6 +	45	0	+ 294	- 257	6	132	16.1	23	36
4	5 +	35	1	+ 242	- 268	6	138	17.8	12	33
5	5 +	52	0	+ 381	- 276	7	125	16.5	27	37
6	4 +	34	1	+ 327	- 268	9	193	38.2	12	32
7	5 +	48	0	+ 370	- 277	5	169	29.8	14	34
8	3 +	46	0	+ 405	- 175	9	156	27.9	13	40
9	4 +	35	0	+ 329	- 205	4	208	31.8	14	31
10	2 +	41	2	+ 450	- 166	6	169	32.6	22	35
*	3 +	07	0	+ 600	- 91	9	174	21.5	24	48

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending November 19, is furnished from the Meteorological Office:—

"The weather during this period was generally fair over the greater part of the kingdom, but slight rain fell occasionally in the western and north-western districts, and much damp mist, or fog was experienced over England.

"The temperature continued above the mean, the excess ranging from 2° in 'Ireland, S.' and 3° in 'England, S.W.' and the 'Channel Islands,' to 5° in 'Scotland, E.' and several parts of 'England, and to 6° in 'England, N.E. and E.' The highest of the maxima were recorded on rather irregular dates, and ranged from 82° in the 'Channel Islands,' 61° in 'Ireland, S.' and 60° in 'Scotland, N.' and 'England, N.E. and S.,' to 57° in 'Scotland, W.' The lowest of the minima were registered during the earlier days of the week, when they ranged from 27° in 'Scotland, E.,' 'England, N.E.,' and 28° in 'Ireland, S.' to 34° in 'England, E., S., and N.W., and to 39° in the 'Channel Islands.'

"The rainfall was less than the mean in all districts over central, southern, and eastern England, and in the east of Scotland the fall was extremely slight.

"The bright sunshine was less than the normal in most parts of the kingdom, but rather exceeded it in 'England, S.' and the 'Channel Islands,' and equalled it in the north and east of Scotland. The percentage of the possible duration ranged from 27 in 'England, S.,' 24 in the 'Channel Islands,' and 23 in 'England S.W. and E.,' to 12 in the 'Midland Counties' and 'Scotland, W.,' and to 6 in 'England, N.E.'"

GARDENING APPOINTMENTS.

MR. JOHN FLOAT as Head Gardener to J. T. CLIFTON, Esq., Lytham Hall, Lytham, Lancashire.

Mr. R. H. BUTCHER, formerly Gardener at the "Acacias," Reading, as Head Gardener to Mrs. MYERS, Sandford Priory, Newbury, Berkshire.

Mr. GEORGE JONES, for the past two years Foreman in The Gardens, Glanusk, Crickhowell, as Head Gardener to JOHN BEYNON, Esq., Trewern, Whitland, South Wales.

Mr. W. F. BLUNT, late Head Gardener, Mill Hill, Middlesex, as Head Gardener to H. E. PHILLIPS, Esq., Caversfield House, Bleicester.

Mr. DAVID RHIND, who has been seven-and-a-half years gardener to The MACKINTOSH of Mackintosh, Moy Hall, as gardener to the Marquis of LOTHIAN, Monteviot, Jedburgh.

Mr. WM. SCOTT, for the last three years Foreman at Ballikilrain Castle, Balfour, N.B., as gardener to WM. M. ROSE, Esq., Wolston Grange, near Rugby.

CATALOGUES RECEIVED.

THE DEVON CHRYSANTHEMUM, Teignmouth, South Devon—Choice Chrysanthemums.

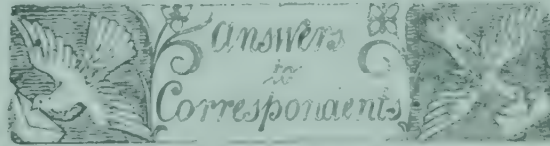
W. P. LAIRD & SINCLAIR, 73, Nethergate, Dundee; and at Cupar, Fife—Roses, Hardy Herbaceous and Alpine Plants.

JOHN RUSSELL, Richmond, Surrey—Hardy Trees, Shrubs, Roses, Fruit-trees, and Herbaceous Perennials.

WOOD & INGRAM, Huntingdon—Fruit and Forest Trees, Conifers and Ornamental Trees and Shrubs, Hardy Climbers, Roses, &c.

KELWAY & SON, Langport, Somerset—Gladioli.

OSKAR HENRMANN, 7, Gross Baekerstrasse, Hamburg—Card-board-boxes for Packing Seeds, Flowers, Wreaths, Palm-leaves, Bouquets, &c.; and numerous articles required by Florists.



BOOKS OF ILLUSTRATIONS OF SEEDS, FRUITS, GRASSES, &c.: J. G. We know of no one work which contains all that you require. *The Dictionary of Gardening*, published by Upcott Gill, 170, Strand, W.C.; and *Sutton's Grasses*, published by Messrs. Sutton & Sons, Seed Merchants, Reading, would afford you a considerable number of illustrations, as would also their *Amateurs' Guide*. Figures of various seeds are found in Kerner and Oliver's *Natural History of Plants*, and other botanical text books.

BULBS, TUBERS, &c., FOR AN AUSTRALIAN GARDEN: W. M. Amaryllis Belladonna, and other species and hybrids; Sprekelia formosissima, Valotta purpurea, Crocosmia, Ixia, Tritonias, Crinum, of temperate and subtropical regions; Watsonias, Gladiolus Hyacinths, Crocus, Tulips, Agapanthus umbellatus; Iris, in great variety, but not I. Kaempferi; Alstroemeria of species, Guernsey Lilies, and many more.

CORRECTION (p. 371)—Beech coccus: for fronds read bark. Balfat show: for Viscountess Hambledon read Hon. F. W. Smith, M.P.

"CUBAKIKO" BEAN: C. G. Probably, the Florida velvet Bean is meant. It may not be a "Bean" at all, but a climbing plant, "Liane" of the Brazilians, as it grows, as is stated in the advertisement quoted, as much as forty feet annually.

"GRENATE" IN SWITZERLAND: S. C. We incline to the opinion that Cuphea platycentra is meant.

INSECTS: W. Murray. The caterpillars are those of the great yellow-under-wing moth. They were no doubt introduced into the frames in the turf. You cannot do better than search for them at night; look under loose lumps of earth or turf by day; sprinkle soot round the plants. C. O. W.—Phthorothus. Vari us species of millipedes (Julus), (not wireworm) which live on decayed vegetation. You might lessen their numbers by digging the land and turning in some fowls, also by the use of quicklime and trenching. The insects ruining the various crops, as Spinach, may be the Spinach-grub, or the larvæ of some description of weevil.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—J. C. 1, Beurré Superfin; 2, Bergamotte d'Esperen; Apples: 1, Nonsuch; 2, Tower of Glamis; 3, local sort of no value—not Easter Pippin.—Programme. 1, Dumelow's Seedling; 3, French Crab; 4, Gipsy King; 5, Braddick's

Nonpareil; 2, not recognised, a very pretty Apple—will examine it again. The Pear is Easter Beurré.—Gloucester Terrace. 1, Easter Beurré; 2, White Doyenné; 3, Beurré Diel; 4, Edmund Jupp; 5, Giont Morceau; 6, evidently from the stock, and worthless.—Manning. Apple, Wareham Russet.—Geo. Wall. Your Apple has since been determined to be American Mother.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—J. Wakeman. Eucomis punctata.—J. H. B. Sedum spectabile.—T. L. & Co. Datura Stramonium.—W. B. Salvia tubifera, Bot. Reg., 1841, t. 44.—C. W. S. Mühlenbeckia or Polygonum complexum.

POTATO ANALYSIS: B. G. S. Albuminoids (or flesh-former), 2.24; soluble carbo-hydrates (some digestible, others not), 21.36; woody fibre, 1.00; fat, 0.21; ash (mineral ingredients derived from the soil), 1.21; water, 73.97. Another form of analysis is the following:—Per cent. of ash, 3.74; potash, 59.8; soda, 1.6; magnesia, 4.5; lime, 2.3; phosphoric acid, 19.1; silica, 2.3; chlorine, 2.8.

SINGLE-FLOWERED ROSES: S. C. If these are worked on Manetti or seedling Briars you will be much plagued by suckers, but in any case you might bad them low down or otherwise.

TOMATO: A. M. Squeeze the pulp in a vessel containing warm water, and the good seed will sink to the bottom. Then gently fill up the vessel, and allow the particles of pulp and light seeds to flow away over the rim. The cleaned seed may be dried on a fine-meshed sieve.

TOMATOS FOR MARKET: T. A. Best of All, Maincrop, both of Suttons, Reading; Hackwood Park, Chemin Rouge, President Garfield, and Hara Green Favourite. Any or all of these.

TWIN-FLOWERED CYPRIPEDIUM INSIGNE: A. W. B. A freak by no means uncommon in this species, due, probably, to great vigour, induced by a large amount of plant-food in the compost.

VALUE OF STOCK IN THREE GLASS-HOUSES. Capital. You should consult a professional horticultural valuer, who would come and inspect the stock of plants and form his estimate on the spot.

VANILLA: A. M. The plant does not "set" its flowers unless the flowers are manipulated in the manner described by us, however vigorous the growth may be. The flower remains unfertilised in our glasshouses for the reason that the insects which visit the flowers and carries the pollen to the stigmatic surface, do not exist here. V. planifolia, the Mexican representative of the genus, furnishes the best vanilla, and aromatica is a synonym; although a southern tropical American species, named V. aromatica, is retained as a true species in the Index Kewensis.

WATTLE, RUSH, OR HURDLES, AS PROTECTION TO PLANTS AGAINST FROST: J. T. P. There is a manufacture of straw mats carried on at Aylesbury by a lady. These mats last two or three years with care, and are very good security against frost. As being capable of withstanding rough winds in exposed sites, thatched-wattle hurdles are to be recommended. You might be able to obtain either of the horticultural sundriesmen.

WEeping Willow Worked on Poplar: S. C. The union of Poplar and Willow might answer. Perhaps some of our readers who have had experience of the Poplar as a stock will kindly give them.

COMMUNICATIONS RECEIVED.—G. B.—Dr. Bretschneider, St. Petersburg.—Dr. Henry.—M. Rashleigh.—E. M. H.—J. B.—E. J. B.—G. H.—Sir C. S.—E. J. L.—Rev. H. B.—Capt. W. D.—M. Chappellier, Paris.—F. W. M.—W. R. & Co.—Sir T. L.—Right Hon. Jos. Chamberlain.—W. K.—E. J. L.—Expert.—W. M. C.—H. M.—R. P. B.—E. S.—E. M.—J. B.—R. D.—D. T. F.—G. M.—Chester.—Dr. Hamilton Ramsay.—W. J. G.—Messrs. Sander & Co.—T. C.—G. E. M.—Filton & Walker.—Alpha.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—Dinter, Salem.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets, see p. viii.)



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 3, 1898.

POGGIO GHERARDO.

I HAD been lamenting that I could find no gardens in Florence after my mind at all, and that churches, statues, pictures, though supremely beautiful in themselves, altogether held the field, when I chanced to hear from a young man who resides in the neighbourhood, that one of the sights of Italy (that was the expression he used), was not far off, and if I could only see it I should be delighted with it in no common degree. That was simply sufficient to make me decide on the course to be pursued, and it was not long before my wife and I found ourselves in the Poggio Gherardo, and asking for admittance at the door of Mr. and Mrs. Ross. Admission was at once granted to us in the kindest possible manner, and a feast of good things was soon spread out before our eyes. I should, perhaps, say here that Mr. Ross is in the strictest sense of those words an Orchid-grower. I have very often heard it said that if you grow Orchids at all you will soon come to think of nothing besides—they transport you; they fill you; they delight you so much that there is no room left in your mind for anything else in the way of flowers—and certainly it is often the case, and I have seen it over and over again. Mr. Ross's houses and collection of Orchids are splendid, and no connoisseur can tear himself away from them till a very long visit has been paid. As a matter of fact, Mr. Chamberlain spent the best part of a day here not long ago, inspecting the collection of plants from morning till evening. Unfortunately, the Orchids were rather lost upon me, because they are somewhat over my head. I have never had an opportunity of taking to them at all, as I wish had been the case. But as it was, under Mr. Ross's superintendence I had a delightful time in the place.

The full Orchid-season, of course, was not as yet come on, but the following grand plants were in blossom among many others that might be named. *Calanthes* of many varieties, among them the beautiful *Darblayana*; *Laelia anceps* and *autumnalis*; *Paphinia cristata* *Modigliani* (the pure white variety); some very fine varieties of *Oncidium papilio*, *Cirrhopetalum ornatisimum*; *Dendrobium Phalaopsis*, *Schroederi* and *superbiens*, and many *Cypripediums*. There were several hundred young hybrid *Cypripediums* coming on, and two of Mr. Ross's hybrids in blossom, one *Rossianum* being extraordinarily robust and floriferous, with four flowers, one stem being twin-flowered. Mrs. Ross told me that frequently occurs. If one had seen nothing more than these it would indisputably have been a red letter day to me.

Though I do not think I should ever wish to

grow Orchids to the exclusion of everything else, it may very readily be conceded that there is a fascination about them which cannot easily be surpassed. As one so often finds about plants, the principle of compensation asserts itself on the Poggio Gherardo. Manifestly, as a rule, tropical Orchids have found a second home which they like, and there is no longing on their part for South American forests, or Burmese jungles, or anything else. Italy is paradise to them, and there is an unequivocal response on their part; but I was told that cool Orchids do not thrive in the same way, and that some of the beautiful North American Orchids, e.g., *Cypripedium spectabile*, resent any attention they may receive. This really seems to be only fair, when for so many other things Nature does everything, and success is so easily gained.

I may perhaps be allowed to say here that Mrs. Ross is an artist of the first rank, and that she has made representations of all her husband's Orchids, which leave nothing to be desired. I think she has something like 1,800 of these pictures, and we had the greatest pleasure in looking over a large number of them. But though Orchids are Orchids, and my only lament about them is that I am not more conversant with them, I feel that I must leave the houses now, or this letter will run into far too great a length.

I have said that Mr. Ross is absorbed in the cultivation of Orchids, but Mrs. Ross has another department of her own, and she is very intent upon it. It is not for me to describe the mysteries of Vine-growing, and how Olives are graded in three several ways, &c. All this and many other things besides, require an education of their own, and must be excessively interesting to those who are located in this sunny clime.

My eyes very soon fell upon objects of interest with which I have to do in the Isle of Wight, and some two or three of them I shall venture to name.

It is curious how one pounces on a thing with which you are familiar, and it seems as though you never could have enough of it. I was arrested at once by a large bed of *Oncocyclus Irises* which were growing *ad libitum* on one of the terraces, and which looked as though they were conscious they had nothing in the way of winter to fear. If those in my garden were ever to have the same appearance on the seventh day of November, I should consider them doomed to most certain destruction before long. How such glorious foliage would be mauled by the bitter east wind—how the thick rhizomes of some of them would be overwhelmed by the floods of rain—but here they were full of promise, which is not at all likely to be dashed, and a glorious feast of blossom may be counted on for a certainty in February or early March! What would I not give for such a walk over the course! No need for any precaution about this, or safeguard against that too probable danger! *Iris Susiana* and all the rest of them will never fail you in Italy at all if you only give them a chance, and though, of course, I am here much too soon to see my favourite flower in all its beauty, I can well understand, from the look of the plants, that in point of size, as indeed about everything else, the blossoms must be of super-excellent value.

Nerines are just now beyond their prime, but there were a few in blossom in pots, and it must have been splendid a short time ago to see a bed of *Nerine Fothergilli* at its best.

Could anything of a more vivid colour be conceived? Among the many good things which I noticed in this garden, it may be said that I have never before seen *Dahlia imperialis* flourishing in the open ground; but I suppose this is an illustration of the difference between England and Italy. Here it is splendid, a very great ornament to the place. But my walk round the terraces and in and out of the different nooks in the garden must be left, in some measure, undescribed, or I shall call for too much space.

I think I may be doing a real service to some fruit-growers in England, and specially to those who live in the south of it, or in the Isle of Wight, if I recommend them to attend to the few following facts. I will relate as nearly as I can what I came across here. We found ourselves in our peregrinations before a tree which I should guess to be about 11 or 12 feet high, and I was informed that it had come from Japan, and rejoiced in the name of *Kaki Giboushin*. This tree must have had at least 200 golden globes hanging from its branches, each one being nearly of the size of a Jaffa Orange, and of a glorious colour. When it was at its best it must have been a sight to see, and the tree must be well worthy of cultivation for the spectacle, but it is not as a spectacle that I am referring to it now. Mrs. Ross asked me if I had ever tasted the fruit, to which I confidently replied that I had done so. And how did you like it? was the next question she put to me. I said, that is a different thing, and I do not remember that I was much captivated by it. She then enquired in what way I had eaten it? I told her, and it seemed to amuse her very much, for she at once replied, "it is no wonder that you did not care more for it; the idea of adding sugar is absurd, and no one ever takes it fresh from the tree, it sets your teeth on edge if you do." I remember somewhere about twenty years ago, that the late Sir William Hutt brought *Diospyros Kaki* to Ryde, and Lady Hutt, knowing that I am interested in such things, sent me a slice of their very earliest fruit, and with it the exact amount of pounded sugar, daintily wrapped up in a piece of paper, which she deemed to be necessary. Her kindness was indisputable, but her knowledge about the matter—and no wonder it was so at that time—was limited. Mrs. Ross laughs at the idea of sugar at all, and she says that when the fruit of *Diospyros Kaki* is eaten, it should be eaten as *Medlars* are. At first, it should be kept in some warm room, and it should not be eaten till it is transparent and soft. If you do this with it, she declares that it is well worthy of being called the food of the gods, and she thinks that in all her wide experience she has never come across anything that can be put in comparison with it; its flavour is unlike anything else, it is unique, "it is heavenly." After such an attestation as this, it seemed well worth while to attend to any instruction regarding it, and the following points may be noted. The best sort for an English garden is *Kaki Giboushin*, because it comes on early in the year, and therefore ripens better than some of the others; it is also of great size and of beautiful colour. This *Kaki* is most avaricious of nutriment, it can hardly be too highly manured, and two good-sized basketfuls of sheep's-dung are given to each tree in the course of a year. It is satisfactory to learn that this Japanese tree will stand at least 14 or 15 degrees of frost; and Canon Ellacombe, I know, must have had it in his garden for well nigh twenty years.

This imperfect notice of a very interesting

spot must now come to an end. It is a delightful drive from Florence to the Poggio Gherardo, and when you get there, the kind greeting you receive at a stranger's hands makes you glad that the expedition was made.

The place is fragrant with memories of other than a horticultural sort. Boccaccio loved it, and described it in his *Decameron*, under its old name of Palagio del Poggio, as the first place visited by the company, who fled from the plague in Florence, and his name will linger here through days that are to come. Poggio Gherardo was bought by Gherardo Gherardi in 1432, and Mr. Ross bought it in 1889 from the last of the Gherardi family. It is said that Sir John Hawkwood besieged it, and destroyed that part of the old castle which is not machicolated, and which is of far later date than the rest. The view of Florence, with its Duomo and Campanile, and all the surrounding tract of country, dotted over, as it is, by innumerable villas, and bounded on the horizon by mountains, which rise one above another, is a thing which can never be forgotten.

It is a matter for thankfulness that Mr. Ross's castle and his Orchid-houses were not ruined by the earthquake which was recently felt here with such tremendous force. As it was, I believe his loss in plants was considerable, and his habitation has needed seventeen large iron clamps to hold it together since the shock. I have several times been told that the leaders of science say that all Florence would have been laid in ruins if the earthquake had lasted only two seconds longer, and that is the exact space of time which Mr. Ross mentioned yesterday to me as standing between destruction and possession of all their fair possessions in Italy.

May the Orchid-houses go on and prosper for many a long year to come, and *Oncocylus* Irises flourish to their very uttermost, and *Nerines* come and go, and *Kaki* Giboushin yield its luscious fruit. May a very much longer time indeed than two seconds stand between the destruction of one of the fairest regions of the earth and objects of great interest, of which now it is full. *H. Ewbank.*

ORCHID NOTES AND GLEANINGS.

"DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES."

THE following species and varieties are figured in No. 21 of this useful publication:—*Aërides multiflorum*, Roxb.; *Cattleya Mossiae* var. *Germinyana*, Hort.; *C. Cecilia* var. *elata*, Cogn.; *Cypripedium purpuratum*, Ldl.; *C. Charles Richman*, Hort.; *Lælia purpurata* var. *Schoderi*, Rehb. f.; *L. purpurato-grandis*, G. Mantin; *Lælio-Cattleya elegans* var. *de M. Fournier*; *Miltonia vexillaria* var. *Madouxiana*, Cogn.; *M. Blunti* var. *Lubbersiana*, Rehb. f.; *Odontoglossum crispum* var. *Marise*, Hort.; *O. brevifolium*, Ldl.; *Sobralia macrantha*, Ldl.

In No. 22 the following are illustrated:—*Cattleya Mossiae* var. *de M. Lesueur*; *C. Schilleriana*, Rehb. f.; *Cyperorchis Mastersii*, Benth.; *Cypripedium politum*, Rehb. f.; *Lælia Crawshayana*, Rehb. f.; *Miltonia Bleuana* var. *nobilior*, Hort.; *Odontoglossum crispum* var. *Francisci*, Cogn.; *O. triumphans* var. *Ajax*, Hort.; *O. elegans*, Rehb. f.; *Oncidium macranthum*; *Phajus Owenianus*, Hort.; *Phalenopsis Esmeralda*, Rehb. f.; *Sobralia Veitchii*, Hort.

CATTELEYA LABIATA.

For the past six weeks we have had a good display of blooms of this *Cattleya*. The plants were purchased about five years ago as small pieces with one and two leads each, and now there are 150 blooms on these plants, several spikes consisting of four to six

blooms, which in some instances measure 8 inches across. The colour of the lip varies considerably in some flowers, the crimson markings being more striking than in others. The plants show up well when associated with *Dendrobium Phalaenopsis Schroderianum*. *Cattleya labiata* at Bickton grows in a span-roof intermediate-house 40 by 20 by 12 feet, but its length running north and south it is exposed to east and west winds, and in severe winter weather the temperature inside falls for a time below 40°. The plants at such times are kept dry at the root, short however of shrivelling the pseudo-bulbs. Lumpy peat and sphagnum-moss are the chief constituents of the potting compost; and the stage on which they stand is of corrugated iron, which is raised to within 2 feet of the roof, and covered with ashes from anthracite coal. I favour Orchid-pots for holding *Cattleyas* in a house so high and wide as ours, as they can then be stood where moisture can be freely afforded during the growing season. Other plants of various genera being grown in the same house beside Orchids, it is not an easy matter to use the syringe and watering-pot in the same careful manner as in a house devoted exclusively to Orchids. The largest number of blooms I have had on a plant is sixteen, several having ten, eleven, and twelve respectively. *W. J. Grace, gr., Bickton, Fordingbridge.*

CATTELEYA × HARDYANA VARIETY.

Messrs Fisher, Son, & Sibray, Royal Nurseries, Handsworth, Sheffield, send a fine form of *Cattleya × Hardyana*, and state that it differs from other varieties of *C. Hardyana* in their possession. It closely resembles *C. × Hardyana laversinensis*, having the same beautiful, rose-tinted petals, with yellowish-white veining, and the same velvety, purplish-crimson lip, with orange-coloured patches on the side lobes, and veins running into the margin as in that variety. The sepals are also creamy-white freckled with rose as in the variety *laversinensis*, but in this, as at present developed, the rose-freckling is less pronounced than in the original. It is a very showy flower, and, like all the other varieties, delightfully fragrant.

CATTELEYA WARSCEWICZII VAR.

A singular and pretty form of this fine species, sent by Mr. Fred. J. Thorne, gr. to Major Joicey, Sunningdale Park, Sunningdale, which, were it not for the known variability of the flowers on imported plants, might be taken for a natural hybrid. The flower, which has somewhat the appearance of a light-coloured *C. Trianaei*, but with the lip of a true *C. Warscewiczii*, has sepals and petals of a delicate lavender-rose, with midribs of a silvery-white at the base. The throat and the blotch on the centre of the front lobe are of a light purplish-rose; the base of the lip deep rose, with cream-white lines running into the yellowish patches on each side of the middle area. The margin is broad, and of the same hue as the petals. It much resembles a variety recently shown as a hybrid between *C. Mossiae* and *C. Warscewiczii*. *J. O'B.*

THE BULB GARDEN.

CRINUM PURPURASCENS.

THIS graceful though small-growing species of *Crinum* has recently flowered with me. It produces a dense tuft of channelled, recurved, tapering leaves 1½ foot in length, 1 inch in width, dark green in colour, with undulating margins. The flower-scape is purplish-coloured, grows 1 foot high, and bears an umbel of six sessile, erect flowers, with white, linear, drooping segments 3 inches long, on long, slender, purplish tubes. The slender filaments and style are coloured crimson. The plant shows ten bracteoles at the top of the scape, indicating that it has not reached the highest possible number of flowers. The flowers are fragrant when they first open, but only last in good condition for a few days. It grows well in a pot standing in a pan of water in the stove-house, affording shade from strong sunshine. It is very prolific in offsets; as many as twenty have been

produced by a single plant in the course of a year's growth.

VELTHEIMIA GLAUCA.

A plant is somewhat uncommon in gardens, although this is of decorative value, and worthy of commendation. The leaves are 1 foot in length, tapering, sheathing at the base, of a beautiful glaucous-green colour, with undulating margins; from the centre of the leaves a flower-spike rises, bearing about fifty slender, tubular, pendulous flowers, spirally arranged, the colour being rose-pink, spotted and marbled with light red, as also is the spike itself. The spreading mouth of the tube is coloured light purple. The flowers vary in length on different plants, from ¾ inch to 1½ inch. It requires intermediate-house temperature during the winter months, at which period it makes its growth, the bulbs being ripened out-of-doors during the following spring and summer, water being afforded occasionally to prevent the bulbs shrivelling. It requires more careful treatment than does *V. capensis*, a plant well known in gardens. It flowers in October, and lasts in good condition about three weeks. *G. B. Mallet.*

BIGNONIA PURPUREA.

THE subject of the accompanying illustration is one of the most effective and beautiful of stove-climbers. It forms a large specimen in the Palm-house of the Botanic Garden at Cambridge, and growing as it does on a rafter, numerous pendent branches formed quite a curtain of flowers. The colour is bright rosy purple, with paler throat, but not so conspicuously white as might be inferred from the drawing. There is a figure, t. 5800, in the *Botanical Magazine*.

The specimen above referred to is planted out, and grows vigorously, which perhaps may account for some differences of measurement in the published descriptions. The stems are round; the leaves sometimes trifoliate, though mostly bifoliate, with petioles about 1 inch long, the secondary measuring about half as much; the leaflets are broadly ovate and shortly acuminate, from 3 to 3½ inches long, rarely with the teeth shown in the illustration (fig. 114). The cluster of flowers is well represented, and, as may be observed there are flower-stalks above and below, the flowers belonging to which could not be shown. Culture is quite of the easiest, but it is worth remark that planting-out has no doubt produced a superior result. The plant is a native of tropical South America. [The plant does not differ materially from that figured in the *Magazine* except in the toothed, not entire leaves. The native country is uncertain, and a casual glance in the Kew herbarium did not reveal the presence of our present plant, but the number of undetermined specimens suggests the desirability of some competent botanist undertaking a monograph of the genus. *ED.*]

NOTES FROM SOUTH CORNWALL.

AS a part of the series of articles on gardening in the southern and south-western counties, contributed by "Our Special Commissioner," we have now to add some brief notes on Cornish gardens from a specially competent observer:—

PLYMOUTH.

A pretty little park adjoining the Hoe, in Plymouth, contained two or three special features, the first being the masses of *Hydrangea Hortensis*, covered with large heads of flowers, mostly of the richest blue; the second was the equally effective groups and bushes of *Veronicas*, chiefly forms of *speciosa*; and the third a collection of tall healthy Tree Ferns behind a huge cage-like wind-screen. It occurred to me that probably other *Hydrangeas* would assume this bright blue colour under the conditions which develop it so markedly in *H. Hortensis*. Possibly they have been tried; if not, then I would recommend such sorts as *paniculata*, *altissima*, *Lindleyi*, *nigra*, *involucrata*, *quercifolia*, *Thunbergi*, and the new *Mariesii*. These are all in cultivation, and worthy of a trial in Cornwall and other places where *H. Hortensis* does so well. The

same may be said of Veronicas, of which we have now so many species, many of them decidedly decorative; but, except in a few gardens, they are not cultivated, although they all grow freely where the temperature is favourable.

CARCLEW.

Carclew, near Falmouth, the beautiful garden of Colonel Tremayne, is rich in rare and beautiful plants,

armata has stood out two years, and is a big bush, bearing a crop of fruit. Colonel Tremayne, who takes a keen interest in his garden, has decided to devote a large lake to Water-Lilies, clothing the banks with masses of Bamboos. I saw the Mlanji Cypress, Widdringtonia Whytei, looking healthy in the open air. A low wall covered with Berberidopsis corallina in full flower was in itself sufficient to make this garden famous. In the houses I saw

of bulb fanciers, if sent to one of the meetings of the Royal Horticultural Society.

PENJERRICK.

Penjerrick has for many years ranked among the most charming gardens in the south. I saw it this year for the first time. It has been the subject of frequent notices in the horticultural papers, so that I need not describe it in detail,



[FIG. 114.—BIGNONIA PURPUREA: FLOWER-LOBES ROSY-PURPLE, THROAT WHITE. FROM THE CAMBRIDGE BOTANIC GARDEN. SEE P. 398.)

mostly exceptionally well cultivated. The Rhododendrons are the great feature, many of the Himalayan species being of enormous size. As an example, I may mention R. Thomsoni, represented by a plant 14 feet high and 14 feet through; this and Embotrium coccineum, 30 feet high, with a trunk a foot in diameter, indicate the character of the garden. Lapagerias are grown on a wall, like Wistaria; Acacia

Cocos Weddelliana, with a stem not more than 2 feet high, bearing a cluster of small Cocoa-nut-like fruits; and Mr. Simmonds, the gardener, assured me that it has fruited annually for the last seven years. He showed me plants which had been raised from seeds produced by this plant. A seedling of Vallota purpurea, with flowers of a distinct pleasing shade of cerise, would, I feel certain, win the special favours

but as an example of a typical English garden it is quite an object-lesson. The size of many of the trees shows that it has been many years in forming, and credit is due to the initial designer who seized upon a well-wooded valley with a stream in the bottom, falling quickly from the house to the sea, and by a judicious use of Pine, Cedar, Cypress, Bamboo, Dracena, Rhododendron, Camellia, Acacia, Fuchsia,

Myrtle, &c., set about upon a carpet of green, or on the edge of the stream, laid the foundation of a garden of exceptional charm. Here I saw big bushes of Camellia, bearing numerous Apple-like fruits; Acacia dealbata as a tree 40 feet high, with a stem a foot through; A. verticillata, a large bush in fruit; Fuchsia globosa, 15 feet through; Araucaria brasiliensis, 20 feet high. Myrtus apiculata rose like a cloud of white flowers; whilst Falconer's Bamboo was a rich mass of bright green plumes, 20 feet through. The New Zealand Lomaria procerca looked like a mass of some Cycad. In shady nooks were big Dicksonias, and forming a turf about them, Selaginella Kraussiana (denticulata) was as happy as a Hypnum. Erica codonodes had grown to a fat bush 8 feet high; Griselinia macrophylla, to a tree 20 feet high; the Camphor-tree to an equally large size.

Among many grand Conifers I noted one of especial interest, namely, a grand specimen of Fitzroya patagonica, 30 feet high, and 15 feet through, whilst the trunk measured 2 feet in diameter. The vigour of these plants, which further north we are compelled to grow under glass, suggest the use of a host of other things that would no doubt do equally well if they could only be got out of the cramped pot and stuffy greenhouse of the botanic garden into the conditions which favour their more fortunate brethren described above. What an open-air botanic garden could be made in Falmouth, for instance!

TRELISSICK.

Trelissick, on the Fal, the garden of C. D. Gilbert, Esq., contains many objects of interest, and some lovely views. The Macartney Rose was there in full glory, covering a low wall and the ground round about with a thick cloak of rich green foliage, studded thickly all over with its beautiful white and gold star-like flowers, and equally striking fruits. A combination of the Jasmine, Solanum, and Jackman's Clematis was a picturesque jumble on a gable-end. Water gardening is here done on a large scale, and big masses of Gunnera, Bamboo, Dracæna, &c., were happy by the side of water which contained Nymphæas and thousands of white Richardias. The yellow-spated species might be tried there.

TREGOTHNAN.

Tregothnan, Lord Falmouth's residence, possesses one of the stateliest gardens I have ever seen. Rhododendrons, Camellias, Conifers, evergreen Oaks—these are represented by groups, avenues, and lawn-specimens, in all the magnificence that a wealthy proprietor, favourable conditions, and bold ideas in respect of planting and landscape effect, can realise. The main features of this garden are no doubt well known to travelling gardeners. I will therefore devote a little space to the newer efforts which, under the able care of Mr. Andrews, the gardener, promise to add to the interest of the estate. Olearia insignis, Senecio rotundifolia, two striking New Zealand plants, are doing well in the open. Lilium giganteum is established under a wall, and has flowered four times in six years, Mr. Andrews says, from the same bulb. Cyclamen persicum is planted in the grass under the trees, and promises to be as much at home there as in the greenhouse. A colony of it at the foot of two Rhododendrons, one R. Thomsoni, 14 feet high and 14 feet through; the other R. Falconeri, 16 feet high and through, as bushy as a Portugal Laurel, and as floriferous as R. ponticum (R. Falconeri had 300 trusses of bloom last year), presented a picture to make a man from the north open his eyes wide. W. W.

(To be continued.)

BELGIUM.

CHOCOLATE AS A TRAP FOR BLACKBEETLES.

At the Horticulture Internationale chocolate has been found a good means of trapping these pests. A small piece dropped into a bottle buried up to the neck in earth proves an irresistible attraction. Ch. de B.

THE CULTIVATION AND CARE OF SHRUBS, ETC.

THE negligible, or neglected, quantity in pleasure-gardens may truly be said to be the shrubberies, and especially in big places, where the difficulty of keeping work in general in a forward condition, leads in some cases to a neglect of that which is taken least account of; and so it occurs that shrubs are starved, with the result that they become unhealthy. This undesirable condition is most pronounced in those instances where the roots of trees mingle with those of the rightful occupants, and thus force on a consequent hastening to decay. In such cases cutting-over generally results in a worse state, and the only remedy is surface-dressing on a liberal scale. Hollies and Laurels I have found relish a 4 to 6-inch layer of soil or vegetable-matter in a decaying condition, the compost-heap supplying the latter. Unfortunately, the quantity of material required to be of real service negatives the use of the above if the distance to be traversed is great. A good substitute is, however, provided by the fallen leaves of the trees in the shrubbery itself; and they ought to be augmented as much as convenient by leaves gathered in its vicinity. The leaves are heaped round the shrubs to a depth, when made firm by trampling of at least 3 feet, and long before a year has past the roots and the process of natural decay have reduced these heaps to quite small proportions, whilst the vigour imparted to the shrubs is at once perceptible. The present season is the best for the carrying out of this operation.

The above is an extreme case; that which follows refers to what ought to be seen to periodically. Where collections of shrubs are cultivated, it will surely occur that a certain number will exhibit a lack of vigour not always unaccompanied by symptoms of ill-health. Foliage dwindles in size, and shoots lengthen slowly. Nor are these conditions invariably confined to worn-out specimens, but they are noticeable in the younger shrubs. I have remarked that exotic plants which find our climate verging near the utmost cold they are able to bear with impunity, are commonly affected in the manner above noted. In these instances a thin layer of fresh cow-manure laid at this season thinly over the surface of the ground, including, of course, the portion covering the roots, is generally a certain remedy. The dung may either be pointed-in the March following, or left on the ground, though I prefer to rake off the coarser portion of the material, and hack into the soil with a hoe that which remains. Unless one has seen the beneficial effects of this proceeding they can scarcely be conceived.

Variegated hardy shrubs are improved in a marked degree by annual or biennial treatment of a like nature. The foliage increases in size, and an added brilliancy of colouring follows. Soot or superphosphate of lime applied in April affects the plants in the same way, but it should be well noted, that one dressing annually is sufficient, and that there is a danger in overdoing manuring, by causing late growth, and as a result "softness," and a greater susceptibility to injury by frost. At the same time, when employed with caution, these dressings are followed by greater hardiness in the subjects treated.

Bamboos provide another example of the necessity for annual surface-dressings. Bamboos, in fact, are apparently capable of assimilating manures applied to the surface in much larger quantities than it is safe to apply to hard-wood shrubs. They do not, it is true, approach in strength or vigour those one sees in the south of England, but after a trial of a few years it is plain that Bamboos may be regarded as quite hardy in the majority of winters in Scotland. They thrive in good loam, ordinarily rich soil, and wet clay, provided they are well nourished. The species we have growing at Tynninghame, are B. Metake, B. Simonsii, and Phyllostachys nigra, the latter growing in wet soil.

In the very dry gravelly soils here, there is great difficulty in securing a rapid growth of some Conifers, as, for example, Abies Nordmanniana, A. Veitchi, A. Hookeriana, Pinus Sabiniana, and Sciadopitys verticillata, but occasional dressings applied about

this time of year cause them to grow fairly well. It is a method which is followed by the best results, whereas the digging of a trench round the trees at the extremity of the roots, the opening being filled with good compost, has scarcely any effect, either good or bad.

In the same class of soils, even when suitable material has been imported, Rhododendrons, Azaleas, and many others of a like nature are greatly benefited by annual surface-applications of cow-dung. A like treatment is invaluable in the case of hedges which either do not grow freely when young, or which exhibit signs of exhaustion when old. These remarks equally apply to Yew or other evergreen hedges as to old hedges of Whitethorn, Sweet Briar, or Roses, &c. There is almost always a dislike to cut hedges back when situated in or near pleasure-grounds, but a dressing annually applied for three or four months in winter and then removed is a certain remedy. B.

NURSERY NOTES.

GREENHOUSE RHODODENDRONS AT CHELSEA.

ON seeing the fine show of colour arranged at the entrance of the largest Rhododendron-house of Messrs. Jas. Veitch & Sons, the mind instinctively travels back to the time when of this class the only representatives found scattered here and there in gardens were R. javanicum, R. jasminiflorum, Princess Alice, and one or two others, and by comparison the magnitude of the work accomplished by the cross-breeder is grasped. Of the javanico-jasminiflorum a large number of beautiful hybrids, both single and double-flowered, have been obtained, and beyond that, the introduction of R. malayanum and R. multicolor, the last-named producing R. Mrs. Heale, the finest pure white yet obtained. Noting the most striking and attractive flowers in the showy group, our choice falls on R. Cloth of Gold, golden-yellow; Hercules, large yellow, tinged pink, and with pink stamens; Apollo, orange-salmon; luteo-roseum; Purity, fine white; jasminiflorum carminatum, rich carmine-red; Souvenir de J. H. Mangles, copper-red, rose centre; balsaminiflorum album and b. roseum, two fine double flowers; Minerva, nankeen-yellow, with pink stamens; Ophelia, salmon-rose; Primrose, pale yellow; Ceres, nankeen-yellow, a first cross of R. Teyssmani; amabile, cream-white, tinted rose; Neptune, scarlet; Princess Frederica, cream-yellow, tinted rose; Favourite, pure pink; Imogene, buff yellow; Princess Beatrice, light pinkish-yellow; Latona, straw colour; Ruby, a richly-coloured multicolour cross; Baroness Henry Schroder, the finest of the light varieties, delicate blush-white; Lord Wolseley, orange-yellow; Thetis, pinkish-nankeen colour, and scarlet crown.

ORCHIDS.

The famous collection of Orchids, while increasing in extent every year, is maintained, despite inimical conditions of London air and fog, in excellent condition as of yore. The home-raised hybrid crosses which become more numerous each year, are this autumn enriched by a fine succession of Lælia Perrin, Cattleya Bowringiana, and other autumn flowers, some of which are in bloom; while on the batches of Lælia × Latona, Lælia × Cattleya × Hippolyta, and other charming hybrids, there are signs of a continuous succession of flowers.

In the warm Cypripedium-house there is a fine show of hybrid Cypripediums; and it may be remarked that for a number of years this particular glass-house has never at any season been without a display of them. Among the handsomest now in bloom are C. × Milo (Ceanothum superbum × insignis Chantini), of the same general appearance as C. triumphans, but with more bright rose colour in the dorsal sepal. Beside it is a batch of C. × Ceanothum superbum, and plants of C. × insignis Chantini, both good and interesting to examine beside their more stately offspring.

Other remarkable plants in bloom are *C. × Arthurianum pulchellum*, distinguished by the violet spot in the upper sepal; *C. × Minozo*, *C. × Prospero*, *C. × Chas. Canham*, *C. × Harrisianum superbum*, and *C. × H. nigrum*, two old but still not superseded varieties; *C. × Niobe*, a number of the effective *C. × T. B. Haywood*, varieties of *C. × Leea*; a fine example of the true yellow *C. insigne Sanderæ*, another of the next best yellow form, *C. i. Sanderianum*; a good example of the clear, emerald-green, yellow and white *C. Lawrenceanum Hyea*; two nice batches of *C. Charlesworthi* and *C. Spicerianum*, and

mers of *D. chrysanthum*, the pretty *Spathoglottis Veillardii*; *Oncidium Lanceanum*, &c.

The *Phalenopsis-house* was filled with a splendid lot of plants in the best possible condition of *P. Stuartiana* and other favourite species, all being in fine flowering condition. As a proof that the success with these rather difficult subjects is not fitful, it may be stated that some of the earliest hybrids were present, and in splendid health, among these being *P. × Hebe*, *P. × Ludde-vioacea*, and others, throwing up flower-spikes. In the *Phalenopsis-house* there were noted some fine examples of

Forbesii, a very handsome form of *O. prætextum*, and another apparently intermediate between it and *O. curtum*, *Epidendrum Wallisii*, and other showy species, all effectively arranged.

The adjoining cool-house contains a large collection of *Cymbidium* occupying the greater part of the space. Here were some healthy plants of *C. Tracyanum*, some hybrids, *C. × Winnianum*, *C. × eburneo-Lowianum*, &c., besides a few of *C. elegans* and *C. giganteum* in bloom. Suspended from the roof in fine condition were a number of species which most gardeners would place in much higher temperature, with but indifferent results, and among them *Vanda corulea*; the blue *Dendrobium Victoria Regina*, the orange-coloured *D. subclausum*, and the nigro-hirsute *D. Lowianum*. In the warm-house, with the tank, the showier crosses of *Dendrobium*, and the rarer varieties of *D. nobile*, together with other showy specimens, were remarked.

The large *Cattleya-house* has a show of fine forms of *C. labiata*; one carefully-watched flower, which was thought would be pure white, developed a blush tint on expanding. Overhead were hundreds of *Cattleya aurea*. In bloom there were noticed only some few of *C. maxima*, *C. Bowringiana*, *C. Dormaniana*, *Lælia autumnalis*, *atro-rubens*, *L. albida*, &c.

The *Odontoglossum-houses*, in addition to having the older stock in fine condition, have some 12,000 of the *Pacho* strain of *O. crispum*, the bulk of which will for the first time flower this season, and it is hoped they will afford many good varieties. In bloom there were *O. tripudians*, *O. Pectoratorii*, *O. Uro-Skinneri*, and others; but the principal show of flowers is due to *Oncidium*s including *O. varicosum*, *O. dasytyle*, and among the last-named probable hybrid of it, and which will doubtless prove *O. præstans* which first appeared with Messrs. Veitch in 1880.

In a small glass-house a few masses of *Odontoglossum Phalenopsis*, or as it is more correctly now called, *Miltonia Phalenopsis*, in vigour were noticed.

SOME NEGLECTED GREEN-HOUSE PLANTS.

ON visiting the best and most extensive of our noblemen's gardens, one almost invariably notices the same old favourites in the conservatory. Not that I would disparage them—by any means; but what I wish is, that they may be supplemented by some of our less-known (though not less beautiful) decorative plants, suitable for furnishing a cool-house. No better example of a greenhouse with a varied collection of good flowering plants can be had than No. 4 in the Royal Gardens, Kew, and anyone interested in this class would certainly enjoy and benefit from a visit there.

But to return to my immediate subject. One of the most useful of summer and autumn-flowering plants is *Gomphrena globosa*, in its varieties, of which alba and purpurea are good examples. It forms an erect, branched growth, about 2 feet high, and bears numerous globe-shaped heads of flowers, varying in colour according to the variety. The best method of raising the plant is from seed; the first sowing should be in April, followed by others in May and June for succession. The seeds germinate readily in pans of light soil, covered with glass, and placed in the propagating-pit. When 2 or 3 inches high, the seedlings may be transferred to small 6-inch pots, putting three plants in each pot. In doing this, it is very necessary to keep them as much as possible in their various sizes, placing the small ones in the same pots, and similarly with the larger and medium-sized ones; otherwise the plants, when fully grown, will present a very uneven appearance. A temperature of 55° to 60° by night suits them well.

Trachelium coruleum grows from 2 to 3 feet high, and has rather pale blue flowers, arranged in a corymbose panicle. It is very useful in the month of August, as its flowers remain in good condition for a considerable time. A white variety is also in cultivation. *T. coruleum* is preferably propagated from cuttings taken in the autumn after flowering. When these are rooted, they may be removed from the



FIG. 115.—CHRYSANTHEMUM "GOLDEN SHOWER." (SEE P. 404.)

smaller numbers of *C. tonsum*, *C. Chamberlainianum*; various hybrids of the *Selenipedium × calurum*, and *S. × Sedeni* section; and in an adjoining house a large number of varieties of the *C. insigne montanum* class, their flowers exhibiting remarkable variation. In bloom, together with the warm-house *Cypripedium*s, were fine examples of the *Ionopsis paniculata*, *Compactia macroplectron*, and *Miltonia vexillaria Leopoldi*, a variety having pretty rose-tinted flowers, heavily marked at the base of the lip with claret colour. Some well-flowered plants of *Dendrobium bracteosum*, and its white variety, *D. bigibbum*; and some allied species were hung from the roof; *D. formosum giganteum*, a number of showy speci-

Dendrobium atro-vioaceum, with blossoms; the snow-white *Angraecum modestum*, showing flower-spikes in abundance; *Calanthes*, *Oncidium Kramerii*, *Miltonia Roezli*, and *M. R. alba*, &c.

The *Rockery-house* was, as usual, well furnished with flowering plants, including a display of a very fine strain of *Oncidium varicosum*, of which there are more than 100 plants, with flower-spikes in all stages. Standing behind these were *Sobralia × Veitchii*, the rare *S. Sanderi*, *S. xantholeuca*, &c. Other subjects in flower were *Vanda tricolor*, *V. suavis*, a pretty *Lycaste Skinneri*, the white-petalled *L. leucantha*, *Zygopetalum maxillare*, and *Z. m. Gautieri*; the elegant *Brassia Lawrenceana longissima*, *Oncidium*

propagating-frame to a cooler temperature. In spring, pot them into 48-sized pots, and grow them in a cool-house during the summer, finally shifting them when ready into 6-inch or 8-inch pots, as may be advisable.

Rivina tinctoria and *R. humilis*.—These beautiful berried plants are charming for summer decoration in the conservatory. They have one drawback, namely, that if not carefully handled, the berries very easily fall off, and stain anything they may come in contact with. Thus they would not be suitable for table decoration, nor for use in apartments; but in their proper place, the greenhouse, these plants are very attractive. The two species are easily raised from seed sown in the spring, and grow rapidly if potted in a fairly good soil, and kept in a temperature of 60° by night. It is not advisable to shade them heavily, as when fully grown, the leaves, especially those of *R. tinctoria*, take on a beautiful autumnal-like tint. This will become still more pronounced if the plants are allowed the maximum amount of light and air. *R. humilis* has numerous racemes, about 3 inches long, of bright scarlet berries. *R. tinctoria* has yellow berries, not so densely arranged in the raceme as *R. humilis*. The racemes are also not quite so long. *Harry H. Thomas.*

(To be continued.)

FORESTRY.

OUR WOODS AND FORESTS.

(Continued from p. 380.)

WHAT we need in England is not a school, but a few practical object-lessons of woodlands, which combine the ornamental and the useful in a manner adapted to the conditions under which the majority of English woods are maintained. It may be imagined that such woods are or could be plentiful enough on private estates, but such is not the case at present, nor do I see much hope of their becoming so until proprietors cease to regard the national improvement of their woods as a dangerous experiment, to try which may possibly end in a disaster to all that is most valued in them. At the present moment British forestry is beginning to realise the fact that it is more or less a failure as a commercial undertaking, and its most ardent exponents are endeavouring to rush it headlong along the lines on which continental forestry has been run for so many years, and with such success from an economic point of view. Naturally enough, a proprietor who does not regard his woods from the economic point of view, recoils in alarm at the very idea of subjecting them to any cut-and-dried "system" of timber-farming which makes no provision for ornamental features, or respect for sentiment. Rather than trust his woods in the hands of the economic forester, therefore, he prefers to go on in the old way with all its imperfections, many of which, if recognised at all, are tolerated with perfect equanimity. Such a feeling, of course, is fatal to all reform; but unless it can be demonstrated what we meant by "reform," I scarcely expect proprietors will allow it to be introduced into their woods. Unfortunately, an idea cannot be carried out, or shape given to a forestry-theory, within the course of a few years; and a feeling exists among proprietors and foresters that a system of management which embraces the remote future is outside the bounds of practical aims. This is the essential difference between State-forestry and that of the private owner. In the former, the future takes equal rank with the present; in the latter, the present over-rides the future in a greater or lesser degree. What is chiefly needed, is a recognition of certain fundamental principles which underlie a suitable system of estate wood-management, an outline of which, so far as my own views go, has already appeared in the pages of the *Gardeners' Chronicle*. To bring to maturity any such system on a private estate is almost an impossibility, and certainly cannot be properly carried out within the compass of an average life-time. But there is nothing to prevent its accomplishment on land which is not subject to change of

ownership, and its accompanying variations of individual interests. The Crown forests are eminently adapted for the demonstration of an approved system of forestry. To import the elaborate German systems of forestry into the Crown woods without any modification might not only arouse great resistance on the part of landowners, but would probably have but little effect upon the general management of estate woods throughout the country.

An essential point in the proper education of the British forester is that of keeping in view the objects for which British woods are maintained. If timber-growing be one of them, it is not the only one, and therefore the continental systems of forestry cannot be introduced intact into this country, although a great deal of what is best in them may be copied with advantage. A due appreciation of what constitutes the picturesque, combined with the technical knowledge of the economic sylviculturist, are qualifications which every proprietor ought to appreciate and require of his forester, and were this generally the case, British forestry would soon show a decided improvement. *A. C. Forbes.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorking.

Vandas.—Plants of *Vanda Kimballiana* which have ceased to flower may be placed in the coolest part of a Cattleya-house, and have very little water afforded for a few months. *V. Amesiana*, a species now showing flower-spikes, should be similarly treated, and placed in full light. The plant needs much care when being removed from one place to another, the succulent leaves being apt to snap off on being slightly touched. The plants of *V. cœrulea* should be placed in the intermediate-house, affording them plenty of ventilation: and plants that are making roots freely will require occasional light applications of water, reducing the quantity immediately the green points of the roots change colour, sufficient being afforded them to keep the leaves fresh-looking and green.

Lælias.—The flowers of *Lælia pumila* and its varieties, *L. præstans*, *L. Dayana*, and *L. marginata*, are always admired, and the plants, being of much decorative value, should be found in quantity wherever indoor plants are grown. Although this species was at one time very rare, and expensive to buy, plants may now be bought at a very low price. Plants newly imported should be placed in shallow pans, and suspended to the rafters, fixing them firmly in the pans with crocks, tying one or two of the pseudo-bulbs to the handle, in order to keep it always steady in the pan—an important fact in enabling the plant to get root-hold quickly. When the new roots begin to push forth, a small quantity only of neat and sphagnum-moss should be afforded them. The compost must never be allowed to get quite dry, and during the growing season water must be liberally supplied. Old-established plants may be afforded fresh rooting material immediately new root-growth begins. These *Lælias* should be wintered in the intermediate-house, as, if exposed to the lower temperature of the cool-house, the young breaks and leaves generally decay, although in summer they are well suited in the latter. Let the plants be closely examined for white-scale, these insects multiplying rapidly.

Cattleya-house.—It will be noticed that *Cattleya Warneri* will be showing signs of activity, both new growths and roots pushing freely; and at this period the plants should be placed in the warmest part of the house, raised up towards the light on inverted flower-pots. For the present time a very small amount of water is needed by these plants, but as growth advances so must the quantity of water be increased. The growth of the pseudo-bulbs of *C. Lawrenceana* has finished, and the plant should be placed in a very light position in order to ripen these; but the bulbs should at no time be allowed to shrivel for lack of moisture, neither should the compost be kept always wet, as this would cause these pretty subjects to decay.

Pleiones or *Indian Crocuses*, now that their requirements are better understood, are becoming popular, and considering the number of flowers produced by the plants at this season, and the nice effects which

may be obtained when they are used as table decorations, they deserve to be extensively cultivated. The greater number of them, as *P. maculata*, *P. m. alba*, *P. largenaria*, *P. concolor*, *F. præcox*, *P. Wallichiana*, and *P. burmanica*, are now going out of bloom, requiring attention forthwith as to repotting. This operation should be carried out before new roots push forth from the green shoots, out of which the flowers sprang, for as these roots lengthen quickly, some are sure to get injured if repotting is delayed. Let the plants be turned out of the pots, remove the old soil, and all dead roots and bulbs, and place the plants in shallow pots or orchid-pans, pans being more convenient for hanging up to the rafters. A 10-in. pan will hold twenty pseudo-bulbs. The pans should be filled to one half their depth with clean crocks, and over this a thin layer of sphagnum-moss should be placed, then a layer of the potting material, and upon this the base of the pseudo-bulbs should rest, filling up around them firmly with a compost consisting of equal parts of fibrous loam, peat, and sphagnum-moss, well mixed with a moderate quantity of coarse silver-sand. When re-potting it is not necessary to part every cluster of pseudo-bulbs, as is often practised, but simply to re-pot them in clusters. When done in this way the vacant spaces between the bulbs may be filled up with the roughest part of the compost, giving preference to the sphagnum-moss. Place them near to the roof-glass of the Cattleya or intermediate-house, and for a few weeks afford scarcely any or no water, but when the plants begin to grow keep the compost moist but no more, affording more as growth progresses. When thoroughly established, weak liquid-manure may be given about once in seven days. *P. humilis*, *P. Hookeriana*, and its variety *brachyglossa*, generally flower about January or February, and till that time they should be suspended close to the glass in the Odontoglossum-house, affording sufficient water to prevent the pseudo-bulbs from shrivelling. Re-potting may be done just after the plants have done flowering.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of Salisbury, Hatfield House, Herts.

The Fig-house.—The trees which are intended to ripen their fruits at the beginning of the month of May should be forthwith started to grow, and for this kind of early forcing, pot-trees are the best, these being more readily forced into growth; and small-fruited varieties are better than larger ones. The following are varieties adapted for the purpose, viz., *St. John*, *Early Violet*, *Angelique*, and *Black and White Ischias*. The trees that are in a suitable condition for forcing are those which have been established in pots for a whole year, and whose shoots are perfectly matured. Before the trees are put into the forcing-house, let them be dressed with Gishurst Compound-soap or other insecticide, and a top-dressing of loam, wood-ashes, and decayed manure given to the ball; and if there is not space to admit of this being afforded without interfering with the space left for affording water, a band of zinc 3 inches deep may be placed round the rim, resting on the soil near the edge of the pot. The Fig-house should also be well cleansed in every part, and the glass made bright, and the walls lime-washed. The bed of tree-leaves should be renewed if the Fig-trees are to be afforded bottom-heat at the start. The Fig fruits well without bottom-heat, but a start is made quicker if it be employed. Ascertain the condition of the soil in the pots, and if it is not moist, afford water in sufficient quantity, and afterwards whenever the soil approaches a dry state. The temperatures at the beginning may be 50° at night, 55° by day with fire-heat, and 10° to 15° higher with sunshine. Maintain genial forcing conditions, syringing the trees once or twice a day as may be necessary, and moistening the floors and walls. Let ventilation be afforded at the top of the house in bright weather, closing it early in the afternoon, and let this sort of treatment continue till the buds begin to push, then increase the temperature a few degrees, and afford a gradual continual rise in the heat. When bright weather allows of high temperatures being given, do not force likewise at night more than the normal. Close about 1.30 or 2 p.m.—that is, while the sun may still be shining on the house. Pot-Figs intended for late fruiting should be wintered in cold glass-houses or in frost-proof sheds, as, if left outside, the embryo fruits are liable to be hurt if the frosts are very severe.

Trees in Borders should be put in good order for starting, as for the pot-trees—that is, they should be pruned, although there will be little of

this required if disbudding and thinning were attended to in due season; and if scale, insects, or mealy-bug be present, let the shoots, &c., be washed with Gishurst's Compound-soap, or syringe or wash with water at a temperature of 150°, or 140° if the shoots are immersed therein. The Gishurst-soap ought not to be used stronger than 2 oz. to the gallon of water. Petroleum emulsion is likewise a good remedy, but it requires caution in the using, so that the oil does not float on the surface. Having dressed the trees, secure the shoots to the trellis. Old trees will need a top-dressing of materials similar to that recommended for those growing in pots and tubs.

Tomatos.—Plants raised from seed in the early autumn will now be ready for shifting into 5-inch pots, using a warmed soil consisting of loam three-quarters and leaf-mould one-quarter, with a small quantity of sand or powdered lime-rubble; afford them a moderate supply of water to settle the soil, and place them in a light place near the glass, in a temperature of about 52° at night, and 58° by day, in cloudy or very frosty weather, but higher with sun-heat, ventilating the house whenever the air is mild.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford, Kent.

Flowering Shrubs.—Of these beautiful objects in the flower garden, too rarely found in sufficient variety in English gardens of to-day, it is always advisable to buy-in and plant as many as space, without crowding, can be found for them. They may be bought-in in quantity, and planted in the nursery or reserve garden. *Kerria japonica*, with its yellow flowers; and the double variety, *flore-pleno*, the variegated-foliaged variety, are pretty shrubs in their season; then we have the *Forsythia viridissima* and *suspensa*, both having yellow flowers; *Deutzia crenata*, *gracilis*, and *Lemoine's* new varieties; *Cotoneaster Simonsii*, *microphylla*, and others. *Hibiscus syriacus*, *Viburnum* (the *Guelldres Rose*), *Hypericum* in much variety, both tall and dwarf; *Philadelphus* (mock Orange), including a number of handsome varieties; *Staphylea trifoliata*, *pinnatifida*, and *colchica*; *Syringas*, and many *Cydonias* in variety, and a great host of *Crabs* with glowing fruits of a variety of sizes. Most of the above shrubs or half trees flower in the spring and summer. Some of these plants are excellent for forming beds by themselves, covering banks, for making margins to beds of *Rhododendrons* or other shrubs, as solitary plants, or in small groups on lawn. I here mention a few of the commoner species that the planter may buy-in and plant at this season, premising that everything is done before-hand in trenching, manuring, and draining the soil to ensure success. In the matter of draining a bed on land that is insufficiently or not drained at all, a pit or dry well should be dug 8 to 10 feet deep and 4 feet in diameter, and half-filled with any hard rubbish, brickbats, stones, big flints, burrs from the garden furnaces, &c., the upper half being re-filled with the better portions of the excavated soil. Into this pit some tile or pipe-drains may lead from the bed and surrounding area, and much good will follow, the land made drier, and consequently warmer and better.

Climbing Roses.—The present time is good for the planting of *Roses* for covering arbours, fences, &c., but the plants will not succeed unless the soil has been deeply trenched and manured, and has had a considerable proportion of fresh loam incorporated with it, in order to maintain healthy, vigorous growth for many years. The following are the most suitable varieties for climbers: *Longworth Rambler*, *Caroline Pillar*, *Crimson Rambler*, *Algeria*, the *Yellow Rambler*, *Aimée Vibert*, *Félicité-Perpétue*, *Rêve d'Or*, *Madame Berard*, the *Dawson Rose*, *Madame Desprez* (enormous cluster of pink, double flowers), *Dundee Rambler*, *Alice Gray*, *Rampant*, *The Garland*, *Reine Olga de Wurtemberg*, and *Polyantha grandiflora*.

Solidago (Golden Rose).—There are few hardy herbaceous perennial plants which afford in late summer and autumn a better display in the herbaceous border than these, with their large feathery heads of pale yellow flowers. The average height of the plants is 4 to 5 feet.

Lathyrus (Everlasting Pea).—For the covering of walls and fences, these plants are very suitable, and the white variety, *L. grandiflorus albus*, is one that is, although scentless, useful for cutting; *latifolius* is the best of the red-flowering species. Good preparation of the soil is necessary for the plants, and once planted they should not be disturbed.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Fittonias.—If these pretty plants are used for indoor decorations at this season, all the spare shoots obtainable may be made into cuttings and inserted thickly together in a bed of sandy soil, or in flower-pots in the propagating-house. The heat afforded the cuttings should not be less than 80°. When *Fittonias* are employed as a furnishing for taller plants, for hiding the mould in the pots and similar purposes, well-rooted cuttings may be tied up in green moss and soil, and placed in boxes kept in the stove or other warm-house. They are then available at any time. Such plants, if kept moist, will keep in presentable condition for a considerable length of time.

Coleus.—In order to winter these plants satisfactorily at this season, place them near the light in a house having a warmth of 60°, which is kept dryish and ventilated, the amount of water afforded at the root being moderate. Small, bright-coloured *Coleus* are attractive when used for dinner-table decoration and other purposes in apartments, but their life under such conditions is short. The tops of leggy plants may be taken for propagation purposes. At this season they strike freely in bottom-heat of 75° to 80°, with top-heat of 10° less.

Ornamental-leaved Begonias.—The dwarf species and varieties have a high decorative value, and associate pleasingly with *Oplismenus Burmanni* (*Panicum*) variegatus, and similar trailing plants. Plants which have become shabby from continued employment in apartments may be cut down to the ground, and kept dryish at the root till they start anew in the spring. A good way of keeping the plants in a healthy state at this season is to place them on the ground, where drip cannot reach them, and where the conditions are such that they cannot get unduly dry. A house with a night temperature of 55°, and one by day of 65° to 70° is best for the *Begonia* either at rest or flowering at this season. For plants of foliage *Begonias* at rest very little light is necessary, and in the case of those whose stems die down in the winter, or others that have been cut down, not any is required.

Plants and Bulbs for Forcing.—The stock of *Deutzias*, *Azalea indica*, *A. mollis*, early-flowering varieties of *Rhododendron hybridum*, *Lilacs*, *Dutch Bulbs*, *Staphylea Colchica*, *Dielytra spectabilis*, and *Solomon's Seal*, may be introduced into gentle heat. In the early stage, the amount of heat afforded should not exceed 50°, more warmth being afforded when the plants have pushed their bloom-buds somewhat. *Lily of the Valley* and *Spiræas* which have been exposed to frost, may be placed in the forcing-house forthwith, a thick layer of moss being placed over the crowns, and kept moist until it is removed, when the growths push through it. *Roman Hyacinths*, *Tulips*, and *Narcissus*, should not be kept in strong heat till the flowers open, but be removed to a less warm place. The stock of *Dutch bulbs* plunged in beds of coal-ashes should be frequently examined, and all that have started removed to cold frames, and shaded from sunshine for a few days.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

The Fig.—Provision ought now be made in northern and midland shires for the protection of the *Fig* on walls, and in inland parts of Kent and in Surrey the *Fig* on south walls often get the points of the shoots killed in severe winters. A good method of protection is to loosen the tree from the wall, and tie the branches in long bundles with tarred string. When a tree is fan-trained this is easily done, four to six bundles being sufficient for a large tree. When these bundles are ready, wheat-straw should be obtained and drawn out straight as for thatching, only it must not be wetted, and with this the bundles should be wrapped round compactly, the straw to be kept in the same direction as the branches, about 2 inches in thickness, commencing at the base and working upwards; if the lower end of each layer of straw is brought well over the top of the previous layer immediately below it, moisture will run to the bottom, and pass into the soil. Each lot of straw must be tied with string before putting on more. Scarcely any frost experienced in this country will hurt trees treated in this manner. Dry bracken may be used instead of straw, or *Asparagus-haulm*, but neither keeps out moisture so well, and that is an important considera-

tion. Especial care must be taken of the points of the shoots, frost being more injurious in its effects when the protective materials are damp. The embryo-fruits for next season being situated thereon, the bundles may be secured in an upright position against the wall. Horizontally-trained *Fig*-trees are not so easily dealt with in this manner. The late R. Gilbert, when gardener at Burghley House, always used *Scarlet Runner*-sticks with the bines on them for protecting his horizontally-trained trees, and by placing them somewhat close together in front of the wall he was able to carry his *Fig*-trees safely through an ordinary winter. The points of the stakes were stuck into the ground about 18 inches distant from the foot of the wall, and long sticks were fastened horizontally near the top, and tied to the trees, which served to keep all taut and safe. Frost being severest near the ground, the stem and the principal roots should be well protected with a heap of coal-ashes, short straw or tree-leaves packed closely around. All the small fruits found at this season should be rubbed off before covering the trees, as such are usually cast off when the sap rises, and even if allowed to remain now, they exhaust the tree to no good purpose. I am aware that it is possible to ripen a few of them occasionally, but they do not make good fruits—the best *Figs* for the following season being nearly invisible at the present time.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

Peas and Broad Beans.—When the *Peas* and *Beans* sown in October show above the ground-level, choose a dry day to stir the soil on both sides of the rows, afterwards moulding them up somewhat. Sometimes mice devour the seeds just as they have germinated, and when this occurs, traps should at once be set for them. It is good practice to coat the seeds with red-lead in powder, and to sow chaff made from Furze in the drills, both of these deterring the mice. *Beans* and *Peas* being very hardy plants, no protection is required by them except in the severest weather. If the plants continue to make a little progress, moulding-up may again be practised, which will be a means of affording shelter from the wind.

French Beans.—Plants growing in pots, more especially with flowers just set, as well as others with usable pods, and those in beds in heated pits, should be carefully syringed on the under-side of the foliage on fine mornings, otherwise red-spider will do much injury to them by exhausting the juices of the leaves. The plants need now all the light possible, and should not therefore be crowded together, or kept far from the glass. Plants in bloom should not be wetted overhead, nor afforded much water at the root before the blooms set. A brisk heat, say 75° to 80°, may be afforded in the daytime, with as much air admitted to the house as the weather warrants, internal conditions being such as will forward growth without encouraging the multiplication of red-spider. Sowings may be made fortnightly. The night temperature of the *Bean*-pit may range from 60° in frosty, and 62° to 65° in mild weather.

Watercress.—The bed of *Watercress*, whether it be in running or still water, should be kept clear of floating weeds and rubbish, and the strongest growths cut off, so as to encourage young or tender shoots, for *Watercress* grows a little in mild winter weather. Fresh beds may now be made in unctuous loam, overlaid when planted with shell or other clean gravel.

The Ice-house.—Let this structure be put in readiness for filling it, removing faggots from the bottom, washing the walls, &c., and throwing it open to sweeten. The rammers and pounding-mallets, hooks, and ice-drags should be put in proper order, and a quantity of new brushwood placed handy.

General Work.—Advantage should be taken when frost has hardened the ground, to wheel manure on to vacant quarters, or stack it at easily accessible points, or to open out trenches for digging soil. Frost, which favours this kind of work, obliges the gardener to afford protection to tender kinds of vegetables or any that are liable to injury, such as late *Cauliflowers*, *Early Broccoli*, white hard *Cabbages*, *Horn Carrots*, *Couve Tronchuda*, and the like. The stores of *Potatoes*, *Onions*, and edible roots should have a close examination on days when rain or snow stays outside work. Then also is the time to paint and glaze frame-lights and hand-glasses, make labels, *Dahlia*-stakes, layering-pegs, seed-boxes, to turn over and mix *Mushroom*-bed materials, &c.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR DECEMBER.

MONDAY,	DEC. 5	Smithfield Club Show, at the Agricultural Hall, Islington, N. (four days).
TUESDAY,	DEC. 6	National Chrysanthemum Society's Exhibition (three days). Meeting of the Floral Committee on Tuesday. Scottish Horticultural Association Meeting.
TUESDAY,	DEC. 13	Royal Horticultural Society's Committee Meeting.
MONDAY,	DEC. 19	National Chrysanthemum Society's General Committee Meet.

SALES FOR THE ENSUING WEEK.

MONDAY,	DEC. 5	Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	DEC. 6	Dutch Bulbs, at Protheroe & Morris' Rooms. Great Trade Sale of Fruit Trees and other Stock, at the Cart House Lane Nursery, Horsell, near Woking, by order of Mr. R. Collyer, by Protheroe & Morris.
WEDNESDAY,	DEC. 7	Dutch Bulbs, Roses, &c., at Protheroe & Morris' Rooms. Great Sale of Fruit Trees and other stock, by order of Messrs. S. Spooner & Sons, at the Wellington Road Nursery, Hounslow, by Protheroe & Morris (3 days).
THURSDAY,	DEC. 8	Dutch Bulbs at Protheroe & Morris' Rooms.
FRIDAY,	DEC. 9	Dutch Bulbs at Protheroe & Morris' Rooms. Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—41°.

ACTUAL TEMPERATURES:—

LONDON.—November 30 (6 P.M.): Max., 48°; Min., 35°. PROVINCES.—November 30 (6 P.M.): Max., 52°, W. Ireland; Min., 39°, E. Scotland. Dull, rainy, windy; slight frosts.

Chrysanthemums.

THE meeting of the Royal Horticultural Society on the 22nd ult., reported in these columns in our last issue, though relatively small, was one of great interest and specially instructive. We allude especially to the Chrysanthemums. Although the number of exhibits was small in comparison to the magnificent displays at the Aquarium, yet the opportunity for inspecting these glorious autumn flowers, for observing their peculiarities, and for appreciating their decorative value under favourable conditions, was in many respects better than could be obtained at the larger exhibition. Mr. NORMAN DAVIS, Mr. WELLS, Mr. GODFREY, and many others whose names are recorded in our previous issue, exhibited cut-flowers and decorative groups, which enabled the visitor to see at a glance representatives of the various types which have been gradually evolved from the original single-flowered form (as illustrated in an article on the evolution of the Chrysanthemum in our columns, November 30, 1880), and illustrations of the manner in which the flowers may be used for decorative purposes.

The marvellous variety of form, the brilliancy of colour, the astonishing progress that has been made by the art and skill of the cultivator, were excellently illustrated. It was most interesting and most instructive to see how the old artificial and incongruous "standard of properties" so dear to the florist of the olden time has been broken down by the variety and the

natural beauty of the newer candidates for public favour. The standard is no longer, at any rate in the case of the Chrysanthemum, a merely arbitrary one, but is consistent with the natural growth, habit, and conformation of the flower, and in conformity with the natural powers of variation exhibited in so marked a degree by the Chrysanthemum; for it must be remembered that here we are dealing not with hybrids between two species, but with variations from one species only.

The decadence of the incurved type is an instance in point. No one can deny some amount of beauty in the old incurved forms, and the skill of the grower was very remarkable, but the result was formal and artificial to a degree; so that whilst we were always glad to see what could be done in this direction, as a matter of curiosity, the excessive formality became repellent rather than attractive. A flower should be a flower, inimitable save by another flower. The ultra regular blooms might, as far as appearance goes, be cut out of paper.

It is to the introduction of the Japanese varieties that we owe our liberation from the old rigid formality which became so distasteful to some of us. Among these Japanese forms great progress has been made. Some of the first which reached this country were figured in our columns so long ago as June 15, 1861, p. 550. The types remain the same, but the development of the type has been most marked. In our present issue we give illustrations, somewhat idealised, it must be admitted, of certain forms which were exhibited by Mr. WITTY. "They are truly extraordinary, but they are only highly developed illustrations of the types figured by us thirty-seven years ago. The raiser of novelties, particularly if he procures his seed from Japan, or from Japanese varieties, occasionally secures some of these extraordinary forms. He introduces to the public only those that he supposes will be useful for exhibition or decorative purposes, and which, upon the whole, and to the ordinary observer, have fairly regular flowers; though, of course, all of them, botanically, are more or less irregular. But the numberless seedlings that are thrown away as soon as they have produced their first flowers, doubtless include many that would be interesting to the botanist, and though of the nature of monstrosities, they would be welcome to some cultivators.

The flowers figured in our present issue represent two varieties that have been raised by Mr. J. H. WITTY, Superintendent of the Nunhead Cemetery, from seed obtained direct from Japan. "What Ho!" (fig. 116, p. 405) has long, drooping, tubular ray-florets, that curl at the tips; and it is curious to note from the illustrations of the buds given, that this characteristic is quite evident immediately the florets emerge from the flower-head, and before they have acquired a fifth part of their length. Our artist has made a pretty picture of the flower, but it is scarcely probable that will have any value as a decorative plant.

In the case of "Golden Shower" (fig. 115, p. 401), the case may be different. Indeed, the Floral Committee of the Royal Horticultural Society have already bestowed an Award of Merit upon the variety, which will afford novel and attractive flowers for decorative effects. The thread-like florets are mostly golden-yellow, but some are red.

In "Golden Shower" the long thread-like florets are really flattish ribbons (ligules), and the receptacle or dome-shaped cushion from which the florets spring is thickly covered

with membranous pointed bracts—one to each floret.

In "What Ho!" the florets are long tubes, some spreading at right angles, others more or less pendulous. The exigencies of our space have compelled the artist to show more of the latter than of the former. But the curious point botanically is, that the receptacle is quite devoid of the bracts mentioned in "Golden Shower." The presence or the absence of these bracts will probably not be noticed by the ordinary cultivator unless his attention be drawn to it, but for the botanist these peculiarities will be considered as of greater importance than the variation in the form of the corollas. There is apparently considerable variation in the size of these bracts in different varieties.

OUR ALMANAC.—According to our usual practice, we shall issue a *Gardeners' Chronicle* Almanac with our first issue in the New Year. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for 1899.

LINNEAN SOCIETY.—On the occasion of the meeting of this Society on Thursday, November 17, Dr. A. GÜNTHER, F.R.S., President, in the chair; in addition to various papers interesting to zoologists, Mr. SPENCER LE M. MOORE, F.L.S., read a paper entitled "The Botanical Results of a Journey into the interior of Western Australia; with some Observations on the Nature and Relations of the Desert Flora, and on the probable Origin of the Australian Flora as a whole." The author briefly sketched the physical and botanical features of the West Australian desert, indicating the parallel of 30° south, as, at least, in the Coolgardie district, the dividing-line between two subfloras. Flowering takes place almost entirely in springtime, when alone the conditions are favourable to it. Statistics of the desert-flora were then given. These comprise 867 known species, of which 860 are Phanerogams, referable to 319 genera, distributed among seventy-three natural orders. Of the flora, 58 per cent. consist of species ranged under eight orders, with Compositæ and Leguminosæ heading the list, leaving 42 per cent. to be shared between the remaining sixty-five orders. The author disbelieved the current theory of Scandinavian predominance; and the prevalence in Eastern Australia of forms of Indo-Malayan facies was held to be due, in great measure, not to immigration, but to descent from the primitive tertiary flora. Moreover, the balance of exchange between Indo-Malaya and Australia in favour of the former area, was considered as coming under the doctrine of chances, and not as implying any inherent superiority of the one flora over the other. While in Europe the Australian, i.e., the xerophilous element was, owing to change in climate, eliminated in favour of the present hygrophilous vegetation, in Eastern Australia the conditions remained as they were in earlier tertiary times until desiccation set in. He held that this desiccation dates from an earlier period in Western Australia; and that this, together with the isolation of the western portion of the continent in secondary times by a sea, and later by stretches of desert, explains the floristic difference between the two halves of Australia.

THE ROYAL GARDENERS' ORPHAN FUND.—We are requested by Mr. A. F. BARRON, Secretary, to state that the next election of children to the benefits of this Fund, consisting of an allowance of 5s. per week until they attain the age of 14 years, will take place early in February. All applications must be made on a printed form, copies of which may be obtained gratis from the Secretary, or any of the local secretaries. Such forms must be correctly filled up, duly signed, and returned to the office by Tuesday, December 20, 1898.

—A meeting of the Executive Committee was held at the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on the 25th ult. Mr. A. W. G. WEEKS presiding in the unavoidable absence



FIG. 116.—CHRYSANTHEMUM "WHAT H!"; COLOUR OF FLOWER YELLOW AND RED. (SEE P. 404.)

of Mr. W. MARSHALL. There was, as usual, a good attendance of members. The following special donations, &c., were announced:—Mr. W. Bryant, sale of flowers at the Rugby Chrysanthemum Society's show, £7 5s.; Mr. J. Hughes, Birmingham box, £4 3s. 4d.; The Sevenoaks Gardeners' Society, per Mr. Cooke, £4; Mr. R. Scott, Bradford box, £1 10s.; Messrs. G. Bunyard & Co., Maidstone, £1 5s. 2d.; Mr. W. Bates, Twickenham box, £1 4s. 6d.; and the Chiswick Gardeners' Society box, 10s. It was announced that Mr. WILLIAM NUTTING has consented to take the chair at the social supper, to take place on the evening of the annual meeting on February 17 next, at Arderton's Hotel.

NATIONAL ROSE SOCIETY.—We are requested to state that the twenty-second annual general meeting of the National Rose Society will take place at the Rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Thursday, December 8, at 3.30 P.M. Proposed new regulation: "In the three Trophy classes at the Metropolitan Exhibition, and in the two Trophy classes at the Provincial Exhibition, the blooms must be staged in boxes of the following dimensions, viz: twenty-four blooms in boxes 3 feet 6 inches long by 1 foot 6 inches wide, and eighteen blooms in boxes 2 feet 8 inches long by 1 foot 6 inches wide, all outside measurements."—A meeting of the Committee will be held immediately after the annual general meeting, to elect the general Purposes Committee for the ensuing year.—The twenty-second annual dinner of the National Rose Society will take place at the same place at 5.30 P.M., R. B. CATER, Esq., President of the Bath Floral Fête Committee, in the chair. Gentlemen intending to be present at the latter function are requested to communicate either with the Rev. H. H. D'CMBRAIN or Mr. EDWARD MAWLEY, Hon. Secretaries.

INTERNATIONAL EXHIBITION, ST. PETERSBURG.—We have received from the Russian Government copies of the schedule of the proposed exhibition which is to be held in St. Petersburg from May 5/17, to May 15/27 next. The President of the foreign section is Professor FISCHER DE WALDHEIM, Imperial Botanic Garden, St. Petersburg.

THE MILAN CHRYSANTHEMUM SHOW.—On the occasion of the first annual exhibition of the Italian National Chrysanthemum Society, the executive issued a very neatly-printed special number of its journal, *Il Crisantemo*. The idea is something similar to the American exhibition souvenir, and visitors will certainly preserve this special issue as a keepsake of a very interesting event. A large portion of the literary matter relates to the Society itself, while other matter includes numerous articles connected with the culture of the Chrysanthemum, its origin, &c. There are several portraits of the leading officials of the Society, of whom Mr. A. SCALARANDIS, gardener to the KING, and President of the Italian Society, is a welcome addition to the published portraits of Chrysanthemum celebrities. The work is very neatly printed, and is enclosed in a coloured wrapper bearing upon the front an artistic allegorical figure of a Cupid distributing cut blooms of the flower which the Society is intended to honour. It is interesting to note that the list of members is rapidly increasing, and that the Society is receiving support from growers in many other countries.

MR. WHITTALL, to whom our gardens are indebted for many introductions from Asia Minor, was recently captured by brigands in the neighbourhood of Smyrna, but was released on Saturday evening. The SULTAN, on hearing of his capture, immediately sent orders to the Vali of Smyrna to do all in his power to procure Mr. WHITTALL's release, and even, if necessary, to pay the ransom demanded by the brigands.

ROYAL BOTANIC SOCIETY.—A meeting of the Fellows of the Royal Botanic Society was held on Saturday, 26th ult., at the Gardens of the Society, Regent's Park, Major J. W. M. COTTON in the chair.

New Fellows to the number of sixteen were elected, and the names of seventeen others were read for ballot at the next meeting. It was decided by the council to extend the series of musical evening promenades in the conservatories in connection with the Fellows' dinners at the new club rooms on December 7 and 14.

A CORNISH GIFT TO THE NATION.—A magnificent batch of Indian Rhododendrons is being sent from the gardens of Tremough, near Penryn, by Mr. D. H. SHILSON, as a present to the Royal Gardens at Kew. The group numbers about twenty, and some of them are of such gigantic proportions as to require a separate truck for each specimen. The assistant-curator of Kew is superintending their removal, and they are to be placed in the new wing of the temperate-house, specially built to receive them. Tremough has been long noted for its Indian Rhododendrons, and those who have had the pleasure of seeing them from time to time will feel gratified that Mr. SHILSON's generous offer was accepted by the authorities, as also will Mr. RICHARD GILL, the gardener at Tremough, under whose care and supervision they have been reared.

A LIQUID FERTILISER FOR CHRYSANTHEMUMS.—The following preparation after a formula given by Professor PAUL WAGNER, director of the German Experiment Station at Darmstadt is recommended in the special Chrysanthemum number of the *American Florist*, by a writer who has used it with satisfactory results during three seasons. It is called Wagner's Solution, and is prepared as follows:—

Phosphate of ammonia, 2 oz.
Nitrate of soda, 1½ oz.
Nitrate of potash, 1½ oz.
Sulphate of ammonia, 1½ oz.
Water, 50 gallons.

The cost of the ingredients is very small, and the preparation, says the writer, is an excellent liquid fertilizer for other plants as well as Chrysanthemums.

JAPANESE PLANTS FOR AMERICA.—An English M.P., who is at present "on his travels," and who recently crossed from Victoria, B.C., to Yeddo on board ship, met with an official from the Government Botanical Department at Washington, U.S., who had been commissioned to select in Japan such plants as may be found suited for various localities in such of the States as promise success for the experiment of transplanting. We shall hope to hear more of this anon.

INDIAN-CORN CROPS OF THE UNITED STATES.—Owing to certain difficulties in collecting the necessary statistics, the complete crop returns for the present year have only lately been published. From these statistics we condense the following note. Of Indian-corn, we are told there was an average yield of 24.8 bushels per acre, as compared with 23.7 bushels in November of last year. The average as to quality is 82.7 per cent., compared with 86.3 per cent. in November, 1897. It is estimated that 7.25 per cent. of the crop of 1897 was in the hands of the farmers on November 1, 1897.

MR. PETER BARR, who is still in America, has fallen a prey to the interviewer. In the *Rochester Herald* (U.S.A.), is an account of an interview a representative of that paper has had in relation to the Rochester Public Parks, and in a minor degree to the general aspect of horticulture in the States. Mr. BARR states that he has visited all of the parks in most of the Western cities, and has just come from Buffalo. The great feature of the American parks is the originality that has been displayed by the landscape gardener. You cannot, says Mr. BARR, compare the parks of any two of the American cities. Highland Park, Rochester, however, appears to have given the tourist especial pleasure, as the following quotation shows:—"It (Highland Park) is more like a botanic garden than a park, differing only in arrangement. Its beauty rests in its being planted with the idea of obtaining good effects, with a natural classification of plants." But subsequently is the following criticism:—"But you need good carriage-

roads here. You are weak in your boulevards. You seem to be too tight on your purses in this respect." Mr. BARR has promised to obtain for the Highland Park a collection of European Pæonies. Mr. BARR was then on his way to New York. He will then go to Canada, and afterwards to California.

PERSIMMONS.—This tropical fruit is getting commoner in our markets than was the case a few years ago. Numbers of well-developed fruits of the size of an ordinary St. Michael Orange, but rather flatter at the top and bottom, were this week remarked in several fruiterers' shops in Covent Garden Market in a state fit for immediate consumption. Now that it is known that, like the fruits of the Medlar and *Sorbus domestica*, it has to be ripened (bletted), and the consumption of it not attempted in the very inviting brilliant red dress of maturity, people will acquire a liking for Persimmons. The fruit now imported come from the Canary Islands, the cultivation of the tree having been taken up by the natives. We hope soon to hear of consignments from some of the West India Islands.

EXTENSIONS OF BRENTFORD MARKET.—The Brentford District Council, upon the recommendation of the Markets' Committee, have decided to extend the Kew Bridge Flower and Vegetable Market at an outlay of over £3000. A large piece of land at the rear of the market is to be acquired and laid out—paved, kerbed, and fully drained and lighted, to be used as stands for sellers and buyers. By this addition the extent of the market will be just double what it was when opened about six years ago.

ALLOTMENTS AT WALLINGTON.—The Surrey County Council, upon the recommendation of its Allotments' Committee, have issued an order permitting the sale of land at Beddington by the Croydon Rural District Council, in order to provide the fund for the purchase of 3½ acres of land at Wallington, Surrey, to be used as allotments. Originally, under the Allotments Act, 7 acres of land at Bandon Hill, Beddington, were acquired by the Croydon Council, for allotments, but subsequently it was found that the site was less suitable than that at Wallington, and they sought powers to sell the former to enable the acquisition of the latter. The new land is approached by an occupation road 10 feet wide, and in other respects it is very suitable for its purpose.

"CHEMISTRY IN DAILY LIFE."—Popular lectures by Dr. LASSAR COHN, translated by M. M. PATTISON MUIR. (London: H. GREVEL & Co., 33, King Street, Covent Garden.)—That the everyday occurrences of eating a meal and lighting a candle involve complicated chemical actions we are nowadays assured by many popular instruction books, upon which the volume before us is a great improvement and advance. It is not wholly elementary, yet not so technical as to dismay any reasonably intelligent reader; it is not a bare-faced compilation from the works of others, and it is brought thoroughly up to date. Its somewhat disconnected style is attributable to the fact that the matter was originally delivered in the form of lectures, so that the chapters pass from argon to matches, from plant-food to cheese, and so on, with but little apparent connection. Dr. COHN is fortunate in finding an able translator in Mr. MUIR, who has supplied the correct English versions of technical words and phrases, and added notes where these are rendered necessary by the German customs or idioms. There are a few illustrations, not especially valuable or original. We read that "These lectures, and the publication of them in book form, caused quite a stir in German circles," and the translation is likely also to prove acceptable, being already in its second edition. It is decidedly one of the best books of its kind, and one we should like to see on the shelves of every garden library.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Reigate and District Chrysanthemum Society have, as the Secretary informs us, forwarded through Mr. J. BROWN a donation of £21 to the funds of this Institution.

THE ROYAL SOCIETY.—The annual meeting of the Royal Society was held on Wednesday last, the President, Lord LISTER, in the chair. The feature of special interest to those concerned in any way with vegetable physiology was the award of a "Royal Medal" to Mr. WALTER GARDINER, in recognition of his discovery of the continuity of protoplasm from cell to cell of the plant. The researches and discoveries of later years have amply confirmed the original assertions of Mr. GARDINER, and our ideas of the nature of a plant as of a series of more or less independent cells, has to be replaced by the idea that a plant is one body throughout which the protoplasm is continuous. We were glad to see that the old plan of calling up the medallists to receive their medals as if they were school-boys called up to receive their prizes, has been superseded, and a more dignified procedure adopted. The medallists are now escorted with some little show of ceremony by the secretaries to the President, who makes the presentation.

of Grapes on boards. The space allotted to each exhibitor will be severely limited. Because early in the season flavour is not to be prominently regarded, it is hoped that judges will be less influenced by mere size of bunch than by size, finish, and colour of the berry, for often these points are the primary tests of cultivation.

PUBLICATIONS RECEIVED.—*Transactions of the Edinburgh Field Naturalists' and Microscopical Society*. Session, 1897-98. The contents include the following papers:—"Illustration of Birds' Nests by Photography," Mr. H. Raeburn; "Microscopic Life," Miss Sprague; "Microscopy and some of its Uses," Mr. W. Blacklock, &c.; and "Diatomaceæ," Mr. J. Russell; "A few Rare Mosses," Mr. A. Murray; "Plants which dissipate Energy," Mr. W. C. Crawford; and other articles.—Among recently-issued books to which it will be our duty to refer at greater length hereafter are: The fourth part of the *Handbook Flora of Ceylon*, commenced by the late Dr. Trimen,

Roses," by George Paul.—*Agricultural Gazette of New South Wales*, September.—*Journal Horticole Japonais* (Journal of the Japanese Horticultural Society), September.—From the Board of Agriculture, 4, Whitehall Place, S.W., Leaflets—50, *Water Wagtails or Dish-washers*; 51, *The White or Barn Owl*; 52, *Gooseberry-Blight*; and 53, *The Pear-Midge*.—*Bulletin of the Botanical Department, Jamaica*, October. This includes "Agriculture of the Sugar-cane, IV.;" "Entomological Notes;" and "Co-operative Farming"—*Origin of Gymnosperms and the Seed Habit* (Botanical Society of America), by John M. Coulter.

HOME CORRESPONDENCE.

THE CHRYSANTHEMUM-RUST.—Information in respect to the Chrysanthemum-rust has been eagerly sought after during the past two months by nearly all growers of the Chrysanthemum in Guernsey. It was remarked for the first time this year, and now there are very few collections in the island, if any, that are not affected. It is prevalent on plants in the ground, as well as in pots. In some cases, the stems are naked, and the rust has affected these as well as the leaves. The malady, in one or two instances, destroyed the foliage in a month from the time it was first noticed, and the flowers, of course, are useless. The varieties mostly infested are The Queen, Souvenir de Petite Amie, Modesto, Adm. Sir T. Symonds, Niveum, Stressa, Mdle. Lucie Faure, Yanoma, Phœbus, and Miss Ethel Addison. Syringing the plants with petroleum, at the rate of about one wineglassful to two gallons of water, has had but little effect, if any, in checking the progress of the disease. Yet some of your correspondents say that they have got rid of it with petroleum used as above, but a much weaker solution. It seems that the prevailing opinion is, "that it cannot be killed;" and the best way to combat it is by using fungicides in the growing-season (either as a spray or a powdery-dusting) as a preventive. This was the conclusion arrived at by the Guernsey Gardeners' Mutual Improvement Association at a meeting on November 8. *W. M. Cameron, Hon. Sec.*

BEGONIA GLOIRE DE LORRAINE.—Too much cannot be said in favour of this comparatively new Begonia, or of its value as a winter-blooming plant. During a visit to the Blandford Chrysanthemum Show, I remarked six very fine specimens which were about 3 feet in height and diameter, and covered with flowers. These fine examples of good cultivation came from Viscount Portman's garden, Blandford; Mr. Alsopp, his lordship's gardener, exhibiting them not for competition. Some readers of this note would be glad to learn from Mr. Alsopp his methods of growing this useful variety. *W. J. Grace, gr. at Bickton, Fordingbridge.*

GAURA LINDHEIMERI.—In a recent issue of the *Gardeners' Chronicle* a note appeared from the Rev. Wolley Dod in praise of this plant. We grew it here for the first time last season, and I am sure that were its merits better known it would be more generally cultivated. Associated with hardy plants in the mixed border it had a very pretty effect, and its slender sprays of pure white blossoms were swayed in a charming manner by the least breeze. If it be planted in groups of half-a-dozen together, it will form nice clumps, that will give numerous flowering-stems from 2 to 3 feet high. These will continue to open successive flowers until checked by frost. Seeds were sown during March, and the young plants were treated in a similar manner to half-hardy annuals prior to being planted-out during May. Paxton describes a variety as having red flowers, and does not mention a white one. I should be very glad to know if there are other worthy varieties obtainable. Perhaps Mr. Wolley Dod can kindly tell us? *W. H. Lees, Trent Park Gardens.*

STAKING CARNATIONS.—We have several clumps of free-growing Carnations in our herbaceous border, which is exposed more or less to rabbits. As will be known to your readers, these destructive creatures in gardens and grounds have a special liking for Carnations. With a view to protecting them, we enclosed the plants with stout lengths of galvanised wire about 20 inches in height. Some of these were left during the summer. The Carnations were

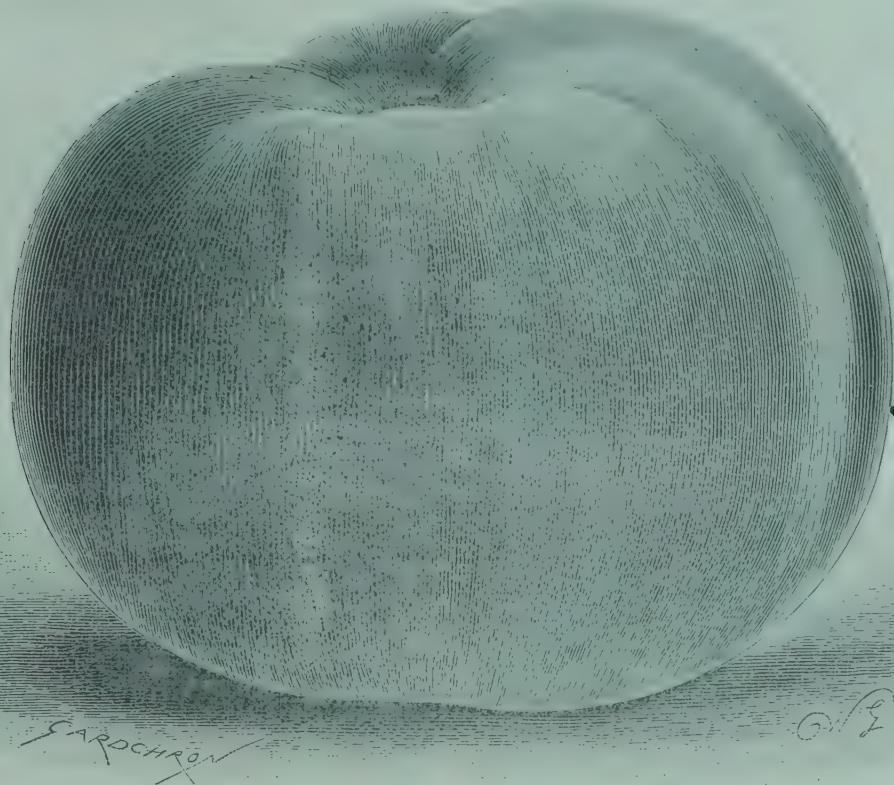


FIG. 117.—BALLENORA PIPPIN: A NEW DESSERT VARIETY OF A DEEP RED COLOUR. IN SEASON IN OCTOBER.

It was shown by Messrs. R. Hartland & Son, Lough Nurseries, Cork, at the Royal Horticultural Society's Meeting, Nov. 22. (For full description of the fruit, see *Gardeners' Chronicle*, November 26, 1898, p. 391.)

A GREAT GRAPE CLASS.—Growers of fine exhibition Grapes will have a splendid opportunity offered to distinguish themselves at the great Shrewsbury show next August, when the executive of the Shropshire Horticultural Society in commemoration of the show of 1899 being the twenty-fifth promoted by the society, will offer in a class for twelve bunches of Grapes in six varieties, two bunches of each, the magnificent sum of £100. This will be, indeed, a record class, but as it is intended to create a commemorative effort, such astonishing liberality may be commended. The result should be a splendid competition, as this large sum will be divided into a good number of prizes. The special object of prize-giving should be to reward good culture and excellent examples generally. The Grapes are to be judged by the Royal Horticultural Society's code of judging scale of points, and whilst each bunch will receive in this way its full meed of merit, a maximum of eight points will be given for decorative effect in staging, as a few plants and some pleasing foliage may be utilised for this purpose. This is, of course, new in relation to the exhibiting

and continued by Sir Joseph Hooker.—*A List of Plants from Formosa*, by Dr. Augustine Henry.—*A History of European Discoveries in China*, by Dr. E. Bretschneider: two vols. and maps. (Sampson Low, Marston & Co).—*Primitive Flora Costaricensis* (Polypetalæ, by J. Donnell Smith), edited by H. Pittier.—*Abstract of Report of the British Pteridological Society*. This mentions the seventh annual meeting of the Society, held last August, and reports the papers read on: "Ferns as Pet Plants," by C. T. Druery; "Fern-growing in Towns," W. H. Atkinson; and "Polystichum angulare proliferum," by W. H. Phillips.—*Hints on Growing Roses*, and *Report of Conferences held by the National Rose Society in 1898 on Pruning and Exhibiting Roses*. The former of these booklets is a second edition of a most useful set of instructions "not intended for experienced rosarians, but for that numerous class who wish to grow Roses, but do not know how to set about doing so." The Report includes papers read at the Rose Conference last June on "How different kinds of Roses should be Pruned," by W. F. Cooling; and "Exhibiting

planted on low mounds; as the flower-stems grew some of them were led through the meshes of the wire, but the bulk of them were in the centres of the clumps. I have never seen Carnations look so well as these did. One great advantage of growing Carnation-trees is that when cutting the flowers for room or other decoration there is no time lost in removing ties from the supports, as none is used. The wire was mostly covered by the stems and flowers when fully developed, and consequently was but little seen. *H. J. C.*

YOUNG GARDENERS AND THE ROYAL HORTICULTURAL SOCIETY'S EXAMINATIONS.—I do not think it would be wise to alter the conditions of these examinations, but let gardeners and college students be examined together as before. It is a much greater honour to gain a certificate in an open class. If one wishes to succeed in an examination, one must work for it. Garden literature is free to all, but young gardeners can be greatly assisted by professional help in the "Coaching by Correspondence" classes, and if they do not actually score at the examinations, they will certainly have more knowledge than previously. I gained a First-class Certificate in 1897. There were many college students before me, and many behind me. I contemplated sitting for the examination several years ago, and at that time took part in a discussion in this Journal, under the heading, "Subjects of Study for Young Gardeners." I would strongly advise young gardeners to prepare for these examinations, and, "if at first they don't succeed, try, try again." *A Certificated Gardener.*

— This is a subject in which young gardeners ought to have a special interest. I cannot agree with your correspondent "P.," for I think a competitive examination is, on the whole, best. I think it would be very much appreciated if the committee of the R. H. S. could award a gold medal to the most successful candidate each year. Could not one gold medal per year be thus afforded by the R. H. S. to the younger members of the profession? As another intending competitor, I respectfully offer this suggestion for the consideration of the Society; and I venture to think that should it be adopted, that medal would not always be won by a college-trained candidate. *King Coyle.*

— Of the several correspondents who have written on the subject of the Royal Horticultural Society's examinations, none seems to have the same reasons for being dissatisfied with the way these are conducted that I have. In paragraph 5 of the instructions to candidates the following sentence occurs: "But arrangements will be made, as far as possible, to frame the questions so as to cover the ground of any syllabus sent up for that purpose." I consider this very unfair to those who cannot attend lectures or classes, and can only work from the instructions sent by the Society. Therein lies the secret why so many college students pass first-class. Granted a fair field and no favour, I think many a gardener would obtain a place in the first-class list instead of as now second and third. *Tot homines, tot sententiae.*

ROYAL SOVEREIGN STRAWBERRY.—When a market grower of Grapes embarks in Strawberry culture for market, and layers some 12,000 plants into pots for gentle forcing under glass, it shows a good deal of confidence in the variety when this huge batch is limited to that one alone. That is the case with Mr. Bennett, of Cobham, Surrey, who not having grown Strawberries before has shown his entire confidence in Royal Sovereign by having this large number of the variety laid down. Really, the batch of plants is a remarkable one, for out of the thousands not one plant seems better or worse than another, and every one looks as if an exact duplicate of its neighbour. All were obtained from a breadth of rather late and not over-rooted plants put out the previous autumn in good ground, expressly to produce runners early, and all were laid direct into the fruiting-pots, large 32's. Thus there has been no second potting. The soil now in the pots is very firm, and is full of fibrous roots. Foliage stout, leathery, and borne on rather shorter leaf-stalks than is seen after a second potting, and the crowns stout and plump. Probably there is no other Strawberry in commerce over which so much would be risked as Royal Sovereign. The plants will not be early forced. There is ample room at Cobham to have 2000 or 3000 fruiting at once, and the object of the grower is to have plenty of fruit as the time for outdoor-produce draws on, as that is the best season. It is interesting to note, that at this place six huge span-houses having lately

been added for Grape-culture, and all for Gros Colman; that six other huge spans are being erected for Peach and Nectarine-culture. Evidently glass fruit-culture is not yet going to the dogs. *A. D.*

EUCALYPTUS GLOBULUS.—I quite agree with "T. H. D." in his remarks as to the rarity or difficulty of growing this plant. Here, we have plants 16 to 18 feet high, that have withstood five winters without the slightest protection whatever, and this last summer I was assured by a friend of mine (one of the Colonial troopers from Australia) that they were as good as any of their size in their native habitat, and delighted him more than anything else in the garden. In my opinion the principal cause of failure to grow them is planting too soon. Plants from seed sown in early spring should be grown on till they come into 6-inch pots, which should be wintered in a greenhouse, and planted in the late spring, in good, well-drained soil, when they will attain a good size, and have good firm wood to enable them to withstand the winters. Yearling plants are too soft to withstand cold, and to plant them is to court failure. I have now about 100 plants ready to go out into the woods and shrubberies in the spring; among them a few plants of *E. Gunni*, which I am going to try. *C. Bailey, Windlestone Gardens, Durham.*

LADYBIRDS AND APHIS.—The usefulness of the above pretty little beetle on plants infested by aphis is a matter of common knowledge. My attention was first drawn to them this summer by the absence of insects on Chrysanthemums where ladybirds abound. After close observation it was seen that they left plants that were cleared, and took up their abode again on plants affected. I stood two plants infested by aphis apart from the general collection (both had the pretty little destroyer upon them), and in a week's time both aphis and ladybirds had disappeared. Being thus convinced of their usefulness, I assisted them in their work of destruction by conveying them from plant to plant, with the result that the stock of insects invariably diminished. I may mention the ladybirds were pretty numerous. I cannot say whether they devour aphis, or whether their presence is objectionable; they are certainly to be encouraged. Can any of your readers kindly enlighten me? *H. C., Blackley.*

EICHHORNIA CRASSIPES.—A correspondent writes from St. Augustine, Florida, U.S.A.:—"A water-plant is giving us a great deal of trouble on the St. John's River. It grows so rapidly that, forming large floating masses, frequently of many acres in extent, it seriously interferes with navigation. It grows 2 to 4 feet high, and the roots extend 2 to 4 feet below the surface of the water. How can we exterminate it? So far we know that salt-water or sharp frosts will kill it, but nothing else so far as yet tried is any success. Can you suggest anything which would hinder its propagation? The problem is a serious one, and is bothering both the Department of Agriculture, and the Engineer Department. From another source we learn that the plant is also called *Pontederia crassipes*, and is similar in appearance to the common pickerel-weed, generally known in the South as Wampsee. Instead of the heart-shaped leaf of the Wampsee, its leaves are broad, lance-shaped, nearly circular. The stems of the leaves are generally enlarged at the water-surface into curious oval bulbs, filled with air-cells, which evidently serve the double purpose of adding buoyancy to the plant and strength to the stem. The flower is very showy, being of a lilac-rose colour, with a yellow spot on the uppermost petal. The individual flowers are about 1½ inch in diameter. They are formed on the central stem in the shape of a spike about 5 inches in length. The roots are numerous, and have a central wire-like stem, from all sides of which feathery filaments project from ½ to 1 inch in length." *W. T. T.*

EATON HALL.

THE seat of the Duke of Westminster at Eaton Hall, near Chester, has been described as a "princely establishment," and such it really is. Eaton, as a private residence, is a wonder. All that money can buy, or skill effect, has been requisitioned in the building and furnishing of the mansion, and the ornamentation of the grounds. And there is no want of uniformity at Eaton. One feature has not been produced at the expense of others, but there is splendour in all, expensiveness in all, design in every detail, grandeur in the pleasure-grounds, in the mansion—everywhere. But it is diffi-

cult to define the degree of quality in words. We lovers of horticulture, that are writers also, have frequently to give well-merited praise to gardens of infinitely less pretensions than Eaton, and occasionally, perhaps, our admiration leads us to speak of them in the superlative degree. Were there a fourth degree, we should unhesitatingly use it in the present case.

Eaton Hall is about four miles from Chester, and there being two ways of reaching the establishment from that city, and either way an enjoyable one, I proceeded by one and returned by the other. My drive outwards led through the pretty little village and near to the church of Ecclestone, where the Dukes of Westminster find their last resting-place, thence to the park gates and the gardens. To gaze for the first time upon the magnificent mansion of polished stone that the present Duke of Westminster has built for himself and his successors, is an experience to be remembered life-long. One does not need to possess a great amount of architectural knowledge to be able to appreciate its beauty and grandeur. The clock-tower is 200 feet high, and I believe there are twenty-eight bells in it, played by machinery. The hours, half-hours, &c., are struck by a "Big Ben," and one might imagine himself in the environs of the Houses of Parliament when listening to its strokes.

A reflection of the wealth of the Grosvenor family is apparent in the interior of the hall, in the building itself, and equally so in the less important structures that form part of the establishment. The garden-walls, offices, sheds, &c., are no exceptions. There is no mean work—indeed, there is no inexpensive work to be seen anywhere.

It may be interesting to recall that the Grosvenor family have not yet been associated with Eaton for quite 500 years. It was about 400 years ago that Sir Robert Grosvenor married the heiress to the last male of the ancient family of Eaton.

The view from the south-east front of Eaton Hall is a fascinating one, and fairly extensive. The immediate district is rather flat, but the Peckforton hills, and the pretty ruins of Beeston Castle, belonging to Lord Tollemahe, are features of uncommon interest and beauty. There are numerous fish-ponds, too, that, meandering through the picture, are occasionally visible. The parterre flower-garden is not an ordinary one, with geometrical beds of various shapes, but each half originally described the letter W. A figure representing the design was published in these columns January 7, 1871, p. 14. It has since been modified in a slight degree. My visit to Eaton was made during August, and the beds were then looking very gay and attractive. To the north-east of the hall is what is known as the Dutch-garden, and in spring the many beds will doubtless be ablaze with bulbous flowers. When I saw them, however, they were decorated with *Violas*—and what are more pretty? Looking over the country in this direction are the Flintshire hills and the estate of Hawarden. Many good specimens of *Rhododendron arboreum* were noticed.

There are fine Conifers and ornamental trees and shrubs, deciduous and evergreen, in the pleasure-grounds, and the Golden Yews are particularly effective and good. But my time was unfortunately too brief to permit me to obtain a sufficient knowledge of the many features of this department to attempt to describe them. During a most hurried walk through them with Mr. N. F. Barnes, who for the past six years has had charge of the gardens, the splendid condition of the grass, the walks, flower-beds, and the grounds generally was most obvious.

THE PLANT-HOUSES.

Most of the glass structures are situate in or near to the kitchen garden, which is approached from every side through costly and richly-decorated gates. Of all the houses, I was most struck with the charming effect to be seen in the long corridor (see *Gardeners' Chronicle*, January 2, 1875, p. 17). This structure is about 125 yards long and 10 feet wide, and probably about 18 feet high. It was furnished abundantly with the choicest and sweetest of flowering-plants. From the roof were suspended grace-

fully, long flowering sprays of Bougainvilleas, Honey-suckles, Fuchsias, Tacsonias, Jasmines, Lapagerias, Roses, and numerous other species suitable to the purpose. *Cobæa scandens variegata* was very effective, and several of the Acacias, including *A. dealbata*, would flower later; also *Cassia corymbosa*. Underneath this floral arcade were stood flowering-plants in pots on either side of the stove path. *Daturas*, *Campanula pyramidalis*, and specimens of most of the indoor summer flowering-plants were here used to good purpose. From this corridor, some of the older hothouses at Eaton open at right-angles, and these, instead of being ordinary greenhouses or stoves for the cultivation of plants of miscellaneous species, possess one prevailing feature in each. For instance, one of them is an aquatic-house, in the centre being a large water-tank, where Marliac's hybrid and other *Nymphæas* adorned the surface of the water. The banks of the water-tank are of rock-work, and upon this were disposed groups of variously-coloured varieties of *Achimenes* in such a tasteful manner that it struck me that this house presented a prettier effect than I had previously observed in a hot house of similar dimensions. There are stages for flowering plants around the sides of the house, and particularly noticeable there were finely-flowered plants of *Clerodendron fallax*.

In another house opening off the corridor were collections of the newer Cannas, and of Hydrangeas. Another house was full of Carnations. Mr. Barnes cultivates thousands of this popular plant, including most extensive batches of the Malmaison varieties. The work of layering had been just completed. In the open also is grown an unusually large number of border Carnations, an area probably an acre in extent being devoted to them. A grand batch of plants of the useful *Cœlogyne cristata* was observed in another house, some of the specimens being very large.

Since Mr. Barnes came to Eaton the glass structures have been supplemented with a number of new ones, built of teak-wood. The *Odontoglossum*-house has been built about eighteen months. It is a lean-to, with a north aspect. The shelves are covered with broken spa (white), a material that absorbs considerable moisture, and that presents a bright and clean appearance. The *Odontoglossums* were looking well, and apparently were in capital health, including the fine variety of *Miltonia Pescatorei*, known as *Duchess of Westminster*, which was exhibited before the Orchid committee of the Royal Horticultural Society in the spring of the present year.

The span-roofed *Cypripedium*-house contained a magnificent lot of plants, and the culture of them was the more interesting because a number of seedlings are being raised. The *Cattleya*-house is another span-roofed structure, and adjoins to the *Cypripedium*-house. Another house was filled with *Dendrobium*, the collection being especially rich in the more useful species that produce showy flowers.

From the appearance presented by a houseful of plants of *Calanthes*, of *Veitchi*, *vestita*, and other varieties, I doubt not but these now furnish a magnificent harvest of bloom. There is a fine span-roof house for the display of Orchids in bloom, an Orchid show-house so to speak; it is 80 feet long, and 18 feet wide, and the woodwork is teak. There were not many species in bloom except *Cattleya labiata* at the time of my visit, it being a very poor month for Orchid flowers. But there were some, and over a groundwork of Ferns, *A. Farleyense*, *cuneatum*, &c., the effect was pretty. Particularly deserving of note in this structure, were some suspended baskets containing plants of *Asparagus*. Both in this and the aquatic-house, the baskets of *A. Sprengeri* and *decumbens* were extremely decorative. If the beauty of these *Asparaguses*, when well grown in baskets, were better known, they would surely be more common. The interior of the Orchid-house was illustrated in a supplement to the *Gardeners' Chronicle*, January 18, 1896.

THE FRUIT-HOUSES

were just as remarkable as the other features of the garden. In the orchard-house there were good crops of Plums, Cherries, Peaches, Nectarines, Apples, and Pears, the fruits of most of these being

just upon ripening. There are numerous vineries, and the canes were well cropped. Madresfield Court, Black Hamburg, Muscats, Black Alicante, and Lady Downes' Seedling appeared to be the varieties grown in greatest quantity. There were abundant crops of Peaches, Nectarines, Plums, Melons, Figs, and Tomatos. At Eaton the Figs are given a space commensurate with their value.

OTHER ITEMS.

A feature of the gardens that is particularly gratifying, is the dwelling or bothy that has been provided for the young gardeners. It is a splendid structure, and affords comfortable and convenient lodging to nineteen young men. It would fill the hearts of many a probationer from a less-favoured establishment with pardonable envy. When at Eaton the present Duke of Westminster was described to me as "an all-round man." This much is evident enough. Whatever he does, whether it be an attempt to win the "Derby" or build a humble shed, he will employ best talent and material. His domestic furniture is unexcelled, and he is just as desirous that his garden should be. It is a pleasing circumstance that the generosity of the Duke of Westminster has made Eaton, with all its grandeur, a place open to all comers. Any one may visit the park and gardens upon payment of the nominal sum of 6d. The proceeds are handed over to Chester charities, and they benefit by about £500 a year from this source.

The present gardener came to Eaton from Sandringham, and the condition of his charge is highly creditable to him. He is a young man, and modest to a fault. We occasionally hear it said that there do not appear to be young men forthcoming to take the place of the best gardeners of a decade ago. The best education for such despondents would be an introduction to several of the younger gardeners I could name of the type of Mr. Barnes.

The best possible feeling exists between the head gardener at Eaton and those who, at the same place, are obtaining an important portion of their horticultural training.

Bidding Mr. Barnes good-bye all too soon, we drove through the long park-drive, where we met many pedestrians and cyclists; thence over the beautiful Grosvenor Bridge that spans the Dee, afterwards past the Rhodæ, where the financially unsuccessful horticultural show of 1897 was held, until we were again in the heart of Chester. R. H. P.

CHRYSANTHEMUMS.

THE ANNUAL PROPAGATION.—Except in a few instances of individual plants, the best results (exhibition blooms) are consequent upon early propagation. It is not upon chance incidents that we base our system of culture of any plant, and as the majority of growers obtain most success from early-struck plants, that is a wise course to recommend.

In Scotland especially a long season of growth is provided by the early insertion of cuttings, and as the finest blooms of the Japanese section that I have seen during a tour of the best shows were Scotch grown, it is a wise precaution to start early. A steady, uninterrupted growth is required that the maturity of the wood may be gradual, timely, and consequently perfect. Many cultivators attach so little importance to the question of maturity that no other circumstance is needed to explain their failure at exhibitions.

Chrysanthemum culture is easy, providing the best cuttings are obtainable, and there is suitable convenience to strike them. The first cuttings consist of stout, not too sappy, growths, that spring up, if possible, clear of the stem of last season's plant. Premature bud-formation is less likely to take place than when the cuttings are taken direct from the stem.

Instead of a plant growing away freely until its first natural break is made in April or May, or it is thought necessary to pinch out the point of the plant to produce an early break, it may produce flower-buds at a height of 6 inches or more. When a few inches

more growth has been made the plant may produce another bud, and this may mean failure. The best convenience for striking the cuttings is that afforded by a cool-house or pit from which frost is excluded, the temperature of which by night should be about 40°, with a rise of 10° by day. A frame, handlight, or temporary box, with sheets of glass covering it, placed on the side-stage of such a structure as near to the glass as possible, affords an ideal site. Cover the bottom of the frame with slates, and over these place a layer of fine coal-ashes, which will make it almost air-tight, and a cool base on which the pots containing the cuttings may be placed.

In making the cuttings trim the leaves from the base, and cut square below a joint. Some gardeners remove the buds from all the nodes that are inserted below the surface to prevent the growth of suckers. If this plan was rigidly followed, how should we obtain sufficient cuttings from those varieties that naturally produce few?

With a view to avoid giving any check to the plants when they will be removed into larger pots, each cutting should be struck separately in 2½-inch or "thumb"-pots. The pots, if new, must be well soaked before use, or they will absorb the moisture from the soil to the detriment of the cuttings; and old pots should be cleansed by washing. One crock is sufficient for drainage in each such pot, and over this should be placed a little of the rougher parts of the compost to ensure a free run for water. Firmly fill the pots with a well-mixed compost of equal parts loam and leaf-mould, with a free admixture of sharp silver-sand. Prepare the holes for the cuttings with a bluntly-ending dibble, and make the soil firm at the base of the cutting. Give a gentle watering with a fine rose-can to settle the soil about the cuttings. Keep the atmosphere close until roots have formed, but ventilate the frame for an hour each morning to get rid of excessive moisture. In the evening, by means of a sponge, all condensed moisture should be wiped from the glass. No shading will be needed. E. Molyneux.

CHRYSANTHEMUMS IN SCOTLAND.

Generally speaking, Chrysanthemums have had a bad time of it in Scotland. There has been scarcely any sunshine, but instead, wet, Scotch-mists, and "hairs," which, though not so wetting as mists, are equally disastrous in their effects on expanding and expanded blooms. Flowers have been later and smaller than usual. Where fire-heat has been necessary to combat damp it has hurried the blooms, but the rule has been late flowering. One very successful grower of high-class blooms for market informs me that he has allowed earlier flowers to damp-off in preference to using fire-heat, in order to keep the others as late as possible. The reason in this case is not encouraging: it is, that early blooms are not worth marketing. Prices were equally low in 1897, and this has caused a reduction to be made in the numbers grown by some of the larger growers, in one case the number involved being tens of thousands. During the last ten to fifteen years the flower-trade in Scotland has increased in the most extraordinary manner, and as Chrysanthemums in winter, and Daffodils in spring and summer, are the chief flowers cultivated, the price in some cases is not sufficient to cover carriage. Nor do they pay the legitimate retailer, for grocers and others purchase quantities when they are cheap, and sell them at prices with which the former cannot compete. [Why cannot they?]

Varieties for furnishing blooms for cutting still include a few old varieties. Of the latter Elaine is largely grown, and Mrs. Rundle and Mrs. Dixon in less numbers. William Holmes in good quantity. *Souvenir de Petite Amie* is a general favourite, and is very largely cultivated; it is a useful variety for private gardens, grown in 6 or 7-inch pots, and eight to ten flowers allowed to develop. *Ma Perfection*, an incurved white, is perhaps even better, and not any taller. Another good white which is generally earlier to bloom than these, is *Madame A. Chatin*. Louise is also a charming variety, and bears a few flowers of good quality in small pots, its low growing habit rendering it suitable for use in apartments. The

Vivian Morel varieties have lost favour among market men, and so has Niveum; but the same cannot be said of them in private establishments where alike as pot-plants and as cut flowers, they are exceedingly valuable. La Triomphante, again, is indispensable. It provides large blooms, the first opening here towards the end of October, and if properly managed continues to bloom in succession until nearly Christmas.

A somewhat out-of-the-way thing has occurred in connection with the bronze sport, George Goodson. My stock of this variety was taken wholly from one plant, and of it four plants were grown. One of these has flowered, G. Goodson, another La Triomphante, and the other two have clear yellow-coloured flowers. Comparing my notes with those of a friend, I was surprised to find that the same thing had happened with him. A favourite yellow variety, and one of the most beautiful is Miss Libby Allen. The habit is straggling, and I find it succeeds best when grown in a 6-inch flower-pot, or a two-year-old plant in two sizes larger. Even the smallest blooms incurve, but the plant should be thinned to carry from eight to twelve blooms, and these, if cut with long stems, provide one of the most lovely of all flowers for furnishing large glasses in winter. Mr. Jones' new yellow Japanese R. Hooper Pearson was greatly admired in Edinburgh. The blooms were not large, as shown, but they gave one the idea that this brilliant yellow flower will have a future in gardens. What we do want is a greater number of broad-petalled varieties, suitable to grow as dwarf plants, and floriferous in habit.

Only a few of the "Anemone" varieties are of value; the most useful of all these is undoubtedly Lady Margaret, which, as a rule, we have in fine form at Christmas. Of single varieties, the only one I am able to find room for is Miss Mary Anderson. It is grown in 6-inch pots, and is useful for furnishing, alike as a pot-plant or when cut. R. P. Brotherton.

CHRYSANTHEMUMS AT KING'S BROMLEY MANOR, STAFFS.

I have lately had an opportunity of viewing the large collection of Japanese varieties in the gardens of Mrs. S. A. Lane to the number of about 500. The plants are grown for supplying large blooms, and are arranged in a span-roofed greenhouse and lean-to vinery, in such a manner that most of the flowers could be seen. They formed a fine sight, nearly every bloom fully up to exhibition size. The following were among Mr. Warr's successes, Australia, large and deep; Chas. Blick, C. W. Richardson, Eda Prass, fine; Elith Tabor, Edwin Molyneux, Etoile de Lyon, very large; Eva Knowles, Geo. Goodson, Graphic, fine; International, large; John Seward, Joseph Chamberlain, Lord Brooke, Madame Carnot, large, and other modern varieties of the Japanese class. Incurved and large Anemone varieties were equally good with the Japanese; Duchess of Fife and Ma Perfection being unusually fine blooms. J. C.

THE VARIETY MADAME CARNOT.

In a short note upon new white Chrysanthemums, I incidentally mentioned that Calvat's Madame Carnot was probably the finest Japanese Chrysanthemum in the world, and to this remark the editor added that it has recently been dethroned by the National Horticultural Society of France. But I may, perhaps, be allowed to say that this is not the fact, if it is understood that I was referring to the variety as an exhibition flower.

As I have taken part in the elections of the Paris Chrysanthemum Committee, I may say that as a show flower Madame Carnot has not been dethroned, and still remains in the group of the best hundred varieties for the purpose of big bloom cultivation. In the group of fifty varieties for dwarf bushy plants, Madame Carnot has, however, been displaced, but that in no way affects her position as a first-class exhibition variety in a cut state. The life of a popular show Chrysanthemum is often of brief duration, and Madame Carnot may follow many another old-time favourite, and disappear, but it needs no prophet to say that it will be a long time first. [We dare not call in question the statement of our valued contributor. We can only say that we quoted

from the *Journal de la Société Nationale d'Horticulture de France* for September last. At p. 899, lists are given of new varieties to be included in the groupements in place of "variétés anciennes inférieures." Among the *variétés remplacées* in the third "groupement" is Madame Carnot. ED.]

CHRYSANTHEMUMS IN ITALY.

Mr. Briscoe-Ironside, a well-known English amateur, resident in Italy, writes that a really marvellous progress and enthusiasm have been displayed this year by the Italians in Chrysanthemum cultivation. There have been three shows, viz., at Turin, Pallanza, and Milan. At the first-named show, the Turin growers were specially noteworthy for their grand display of plants, most of them being no higher than 2 feet. Milan exhibition (see also p. 406) was stronger in cut blooms, and the show was held in the Gallery of Fine Arts, a building well lighted and more suitable for the purpose.

This show was held under the auspices of the new Italian N.C.S., and it is a curious fact that the only two First-class Certificates awarded by the Floral Committee, were to seedlings by the eminent French raiser Ernest Calvat.

Mr. Briscoe-Ironside was awarded a Gold Medal at Turin, also a Silver Medal and Grand Diploma of Honour for a group of plants, 12 yards long by 6 yards in width, which he set up at the Pallanza show. He was also successful at the Milan gathering, where he was awarded a Gold Medal. Other exhibitors were Mr. Scalarandis, Messrs. Radaelli, Mr. Brocchi, and Molin.

Those friends of Mr. Briscoe-Ironside who remember his earnest enthusiasm in all matters relating to the autumn queen, will not be surprised to hear that some of it has been imparted to his Italian neighbours, and will congratulate him on his successes. C. H. P.

POPULAR SHOW CHRYSANTHEMUMS.

Looking over the records of our leading shows, one cannot help noticing how very largely exhibitors rely upon the same flowers all over the country for their most successful boards. The following names, tabulated from the first-prize collections in the principal classes at our best shows of the season, are given as an indication of what may be regarded as the most popular varieties with the big prize-winners from one end of the kingdom to the other, viz., Madame Carnot, Australia, Madame Gustave Henry, Phœbus, M. Chenon de Leché, Mrs. G. W. Palmer, Edith Tabor, Mrs. J. Lewis, Edwin Molyneux, Mrs. C. Harman-Payne, Simplicity, Lady Hanham, Pride of Madford, Vivian Morel, Mrs. H. Weeks, Oceana, G. J. Warren, Elia Curtis, John Seward, M. Pankoucke, Chas. Davis, Pride of Exmouth, Lady Ridgway, Mme. G. Bruant, G. C. Schwabe, Graphic, Mrs. W. Mease, Robt. Powell, Eva Knowles, J. Bidencope, Secrétaire Fierens, Dorothy Seward, Lady Byron, Mary Molyneux, N. C. S. Jubilee, Madame Marius Ricoud, M. Hoste, Elthorne Beauty, Thomas Wilkins, &c.

Some growers may be surprised to learn that only once was Sunflower shown in these collections, and that other varieties such as Mdle. Thérèse Rey, C. B. Haywood, Madame Ph. Rivoire, Mdle. M. A. de Galbert, Mrs. C. Blick, and Duke of York were only shown twice. C. H. P.

COLONIAL NOVELTIES.

No one who has been interested in the Chrysanthemum for any length of time can have failed to notice the numerous and decisive helps along the road to popularity that the wonderful Oriental flower has received at various times. And varied as these have been during the past twenty years or more, there seems to me to be an indication of another new departure of no little importance, i.e., the raising of new seedlings in the colonies. A few of the best, such as Australia, Oceana, Pride of Madford, are well known, and are in general cultivation in this country; but the present season has witnessed an influx of novelties from colonial sources that promises to rival in number and quality the steady importation from the continent.

At the trade-displays and floral meetings there have been this season far more Chrysanthemums of

colonial origin than ever before, and many of them are flowers of the highest promise. Indeed, there are some that, in the opinion of the exhibitor, must take rank with anything produced by the older and more experienced growers of American and European fame, the finest example being, perhaps, Mr. T. Carrington, a big, massive Japanese incurved, with very broad florets, colour deep rosy-purple, with a silvery-pink reverse, the florets being long, pointed, and of good width. Miss Nellie Pockett is another—a Japanese with long, narrow florets, grooved, pointed, and incurving; a close, compact flower, of large size colour pure waxy-white. Then Chatsworth also belongs to the back row blooms; this is a Japanese, with long, drooping florets, colour white, shaded pinkish-purple. A rather fine Japanese incurved is to be found in John Pockett, which has broad florets, and the colour a rich shade of deep golden chestnut-bronze, and a golden reverse. Purple Emperor is not so large as those already mentioned, but its form and colour are really fine. It is a Japanese of good build, very full and double, and the colour a rich velvety shade of plum-coloured purple, reverse silvery.

In new yellows, Miss Mary Underhay is at once striking and good. The florets are of medium size, and are grooved and incurving, the colour a very pure pale yellow, and in the same shade Mrs. Ernest Carter, of the long petalled Japanese type, also deserves to be mentioned. Others, such as Mrs. H. Briscoe, rosy mauve, with silvery reverse; Beauty of Adelaide, dull rosy-pink Japanese, with very long florets; Wonderful, crimson and gold; Mrs. Bissett, white; G. Kerslake, Junr., white; Miss Vera May Fraser, terra cotta; The Convention, terra cotta; Mrs. E. H. Haines, golden bronze; Euterpe, rosy-mauve; and several more will, no doubt, be heard of again.

If our colonial friends are likely to produce such a collection as these every year, they are certainly destined to become very formidable rivals to the raisers upon whom we have hitherto depended for our novelties. C. Harman Payne.

Obituary.

PROFESSOR ALLMAN. — Naturalists the world over will regret the loss of this distinguished zoologist, who held successively the chairs of Natural History in Dublin and in Edinburgh. On the resignation of Mr. Bentham, Allman became President of the Linnean Society, where his great knowledge and genial manners endeared him to the Fellows. Although Dr. Allman's original work was mainly of a zoological nature, he had a good botanical knowledge, and his garden at Parkstone, near Poole, was so filled with rare and interesting plants as to be a source of great delight to visitors. Dr. Allman had for many years been an occasional correspondent of this journal. He died at Parkstone on the 24th ult., in the eighty-seventh year of his age.

SOCIETIES.

NORFOLK AND NORWICH HORTICULTURAL.

NOVEMBER 17.—A remarkably good exhibition was seen in St. Andrew's Hall on this occasion, and a canvas annexe erected by the side of the Hall was full of excellent vegetables.

In the Blackfriars Hall was arranged the fruit on both sides, while down the centre Messrs. GEO. BUNYARD & Co. staged an extensive and splendid collection of Apples and Pears. Mr. GAYMER, of cider fame, had a large pyramid of Cider Apples, and sample bottles of what is made from them; while at the far end Messrs. DANIEL BROS. had a large and attractive collection of plants, flowers, fruits, and vegetables, of great interest.

The judging commenced somewhat late—too late, in fact, and as it is the practice to admit visitors at noon the judges are somewhat hampered in their work, and anything in the way of note-taking becomes very difficult; therefore, only a few salient points of the show can be touched upon. We may say of the plants that they were mainly bush specimens, generally well grown, and carrying good heads of bloom. They were ranged along one side of the hall in a good light, and were a leading feature. Other plants were shown, Orchids, Cyclamens, &c.

CHRYSANTHEMUMS—CUT BLOOMS.

The leading feature at Norwich is the cut blooms, and it may be said of the Norwich show this season, that every entry was staged. The collection of Japanese varieties was a fine feature, Mr. F. Hanson, gr. to Sir S. Crossley, Bart., taking the 1st prize with fine blooms, many of them the latest novelties; Mr. R. C. NOTCUTT, nurseryman, Ipswich, was 2nd, and among his capital blooms was a remarkably fine one of Mrs. W. Mease, which was selected as the best Japanese in the show.

The best thirty-six varieties were staged by Mr. Sheddick, gr. to Mr. A. E. FELLOWES; this lot consisted of eighteen Japanese and eighteen incurved, the latter strong, being fresh, even, and well balanced. Mr. E. S. TRAFFORD was 2nd, with very good Japanese, but the incurveds fell below Mr. Sheddick's in size and finish.

In the class for twenty-four Japanese, Mr. W. Allan, gr. to Lord Suffield, Gunton Park, Norwich, was 1st, with some very fine blooms, and so good was the average that this stand was awarded, in addition, the Certificate of the National Chrysanthemum Society. Mr. W. HAPTHORPE, Cambridge, was a good 2nd.

Mr. C. E. GOOCH had the best twelve of Japanese, all of fine substance; and Mr. E. F. BRITTON was 2nd, G. J. Warren and E. Molyneux being particularly good.

The class for twelve varieties of Japanese brought a good competition, though the wording of it needs some revision, as one exhibitor brought only twelve blooms in four varieties; Mr. ALLAN was 1st, Sunstone being shown in fine character. The name of the 2nd prize-winner was not stated. There was a keen competition with six blooms of Japanese, Mr. J. A. KENDREW was 1st with a capital half dozen, Mrs. G. W. Palmer being finely finished; Mr. THOS. CHAPLIN was 2nd. The best six blooms of one variety were furnished by Madame Carnot, well shown by all the prize-winners; Mr. B. FLETCHER was 1st, and Mr. F. RANDALL 2nd. The best six Japanese any colour but white, were Edith Tabor, from Mr. G. E. GOOCH; Mr. W. ALLAN came 2nd with fine blooms of M. Chenon de Leché, somewhat uneven in colour.

Some very good incurved blooms were shown, Mr. HANSON being again to the fore with twenty-four blooms, such varieties as J. Agate, Mme. Ferlat, C. H. Curtis, Lady Isabel, Bonnie Dundee, and others, were finely developed. Mr. E. S. TRAFFORD was 2nd; it contained a finely-finished bloom of Ma Perfection, which bids fair to become a very popular white incurved.

Mr. E. F. BUXTON was 1st with twelve very fine incurved, so even and well finished that the Certificate of the National Chrysanthemum Society was awarded to it as the best stand of incurved varieties in the show; Mr. B. E. FLETCHER came in a good 2nd.

Mr. T. RANDALL had the best six blooms of any one variety, staging C. H. Curtis in fine character; Mr. BIRBECK was 2nd with Duchess of Fife.

There were classes for amateurs, in which both Jap nese and incurved were creditably shown. The reflexed, pom-pom, and Anemone types appear to be declining features at Norwich, as elsewhere, the ponderous Japanese dominate with cultivators to such a great extent. What few of the foregoing types were staged were generally good.

FRUIT AND VEGETABLES.

In regard to fruit, Mr. B. E. FLETCHER had the best collection of six varieties, and among the principal prize-winners with Grapes were Mr. ALLAN, Mr. C. H. WATTS, and Mrs. FISON. Apples, Pears, and other fruits were in good character.

All types of vegetables were shown pretty well, and many in very fine character. It was noticeable that Sea-kale was prominent in most of them. The collection of eight varieties which won for Mr. G. Davidson, gr. to Mr. PETRE the 1st prize was remarkably good.

The special prizes offered by Messrs. Daniels Bros., Messrs. Sutton & Sons, Messrs. Carter & Co., and others, all brought good competition. There appeared to be a remarkable absence of coloured varieties among the Potatoes; perhaps the judges discount their value because coloured.

MISCELLANEOUS.

In the way of miscellaneous exhibits, Mr. J. GREEN, Norfolk Nurseries, Dereham, had two large tables of Chrysanthemums of every class, of excellent quality, and a Certificate of Merit was awarded to him for a decorative variety named Black Hawk. The same award was made to Mr. R. HOLMES for decorative Chrysanthemum Lizzie Adcock, a clear golden form of Source d'Or. The NORFOLK AND NORWICH HORTICULTURAL SOCIETY had an interesting miscellaneous exhibit. Mr. A. J. DAWDY, Norwich, had elaborate wreaths, bouquets, sprays, &c.; and Mr. F. ALDIS, Norwich, the same, only on a larger scale, and a very attractive feature the stand was. The weather was favourable, and the attendance very large. Special awards were made to all the miscellaneous collections.

We understand this is the last year of Mr. E. H. Pollard's management as secretary, which will be a matter for regret with many exhibitors.

WOKINGHAM AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 22.—A very attractive exhibition, of small dimensions, was provided in the Drill Hall on this occasion, and the day being a bright one the various exhibits were seen to the best advantage. Some bright groups found a

place round the sides of the hall, while the fruit and cut-flowers were on centre tables.

The 1st prize for a group of Chrysanthemums and foliage plants was won by Mr. J. Cowie, gr. to Sir T. LUCAS, Bart., who expressed excellent taste in his arrangement; Mr. W. P. Bound, gr. to Mrs. LEVESON GOWER, was 2nd.

Mr. W. J. Jones, gr. to Sir R. WILMOT, Bart., was 1st with a group of Chrysanthemums bearing specimen flowers. The groups of plants not disbudded made the best display, because, bearing a large number of blossoms, they formed attractive batches of colour. Mr. C. Moles, gr. to W. H. PALMER, Esq., the president of the society, was a good 1st; and Mr. R. Chamberlain, gr. to F. N. LONERGAN, Esq., 2nd. Mr. MOLES also had the best group of flowering and foliaged plants nicely arranged, having Chrysanthemums, Marguerites, zonal Pelargoniums, &c. Mr. G. Lane, gr. to Miss RIDGES, Englefield, was 2nd also with a nicely arranged exhibit. There were also small collections of foliaged and flowering plants, classes for Primulas and Ferns shown in threes, all of which helped the display.

Some very good cut flowers of incurved Chrysanthemums were staged. Mr. G. LANE staged an excellent dozen, chief among them Mille. L. Faure, Dorothy Foster, Ma Perfection, C. H. Curtis, Violet Foster, Bonnie Dundee, and Empress of India. Mr. R. Bassil, gr. to D. H. EVANS, Esq., Pangbourne, was 2nd, also with fine blooms. Mr. G. LANE had the best six of one variety, staging good C. H. Curtis.

In the class for twelve Japanese blooms, Mr. R. BASSIL came in 1st, having well-developed blooms, chief among them Lady Hanham, Charles Davis, Edith Tabor, Australie, Ella Curtis, Mrs. Maling Grant, Nellie Pockett, &c. Mr. G. LANE was 2nd; his leading flowers were Madame Carnot, Jalerie, Graphic, Madame Ricoud, and Joseph Brooks. Mr. R. BASSIL also had the best six blooms of one variety of Japanese, staging well-developed Australie; Mr. Lane was 2nd, with Desdemona. In the amateurs' division, good blooms were staged.

The best table group of Chrysanthemums, arranged with foliaged plants, came from Mr. E. Paine, gr. to the Rev. A. G. CAMPBELL, Bracknell; and Mr. R. CHAMBERLAIN was 2nd.

Fruit—Some good fruit was shown. Mr. CHAMBERLAIN had the best three bunches of black Grapes, staging well-finished Alicante; and Mr. Howell, gr. to G. E. KRUGERS, Esq., was 1st with white Muscats. Mr. CHAMBERLAIN was 1st with four dishes of excellent dessert Apples, having fine fruit of Blenheim, King, Cox's Orange and Ribston Pippins; Mr. W. P. BOUND was a good 2nd with smaller, but very pretty fruit. Mr. BOUND was 1st with four dishes of culinary Apples, having a very good collection, consisting of St. John's, Alfriston, Peasgood's Nonsuch, and Mere de Menage; Mr. G. LANGRIDGE was a good 2nd. Mr. CHAMBERLAIN was also 1st with four dishes of Pears, having capital examples of Pitmaston Duchess, Beurré Clairgeau, Doyenné du Comice, and Beurré Sterckmans; Mr. LANGRIDGE was 2nd.

Apples in single dishes were shown by several amateurs. There were some table decorations, and also bouquets formed of Chrysanthemums, that were very pretty and bright.

Vegetables were fairly numerous, and of good quality, especially those competing for the special prizes offered by Messrs. SUTTON & SONS.

ABERDEEN CHRYSANTHEMUM.

NOVEMBER 23, 24.—The third annual show, promoted by this Society, was held in the Music Hall Buildings, Aberdeen, on the above dates.

Year by year the entries have increased, and on this occasion they numbered no fewer than 460. These included Chrysanthemums, Orchids, and other pot plants, besides fruit and vegetables. In 1895, the first show of the Society, the total numbers were 251, in 1897 it rose to 397. In point of quality, too, the show was excellent, the display surpassing anything previously seen in Aberdeen. The show was opened by the Lord Provost of the city.

In the open group class, Mr. G. STEPHEN, gr., Cupar, stone Lodge, was 1st, with an array of well-bloomed plants, tastefully arranged; his chief varieties were Tynemouth, Vivian Morel, and Phoebe; and Mr. William Proctor, gr. to Sir WILLIAM HENDERSON, Devanha House, was 2nd, with a scarcely inferior display.

Coming to the cut flowers, the feature of the show was the exhibit of Mr. J. GRANT, Crimonmogate, in the class of twenty-four Japanese Chrysanthemums. The finest flowers were Simplicity, Australie, Edith Tabor, Mrs. C. H. Payne, Mutual Friend, Phoebe, Oceana, Pride of Madford, E. Molyneux, Australian Gold, and Modesto, the last-named being magnificent. Mr. G. Ogg, Morken, was 2nd, with some lovely blooms, but lacking the grace and finish of the 1st prize collection. Other principal prize winners in the section for all-comers were Mr. J. PRIME, gr., Strichen; Mr. FRASER, gr., Crathes Castle; Mr. ALEXANDER ROBB, gr., Glenburnie Park; Mr. REID, gr., Durriss; Mr. GRIGOR, gr., Fairfield; and Mr. KENNEDY, gr., Brucklay Castle.

The following are the principal special prizes and the winners:—(Open), three Chrysanthemums, pots not exceeding 11 inches in diameter, 1st prize, Gold Medal, Mr. WILLIAM PROCTOR, Devanha House; six Chrysanthemums, at least four varieties, pots not to exceed 6 inches, one bloom to each plant, Mr. W. Ogg, Morken; twelve Japanese Chrysanthemums, at least six varieties, all named, Mr. J. PRIME, Strichen; twelve incurveds, at least six varieties, all named, 1st prize, Gold Medal, Mr. GRANT, Crimonmogate; six bunches, single flowered, in at least four varieties, 1st prize,

Silver Medal, Mr. GRIGOR, Fairfield; one hand-bouquet, Chrysanthemums, any kind of foliage, Gold Medal, Mr. ROBB, Glenburnie Park; one lady's spray, any kind of foliage, Silver Medal, J. H. FIFE, Thistle Place, Aberdeen.

In the amateur classes, Gold Medals were won by Mr. COURTIS, Hardgate, Aberdeen, and Mr. TOUGH, Bon Accord Street; Mr. COURTIS also carried off a Silver Medal for best six blooms.

There were one or two additions to the show in the shape of exhibition displays. Messrs. DOBBIE & Co., Rothesay, had a very fine display of Chrysanthemums, including four dozen varieties, mostly new, prominent amongst these was a beautiful green French variety (Madame E. Roger), and the collection was backed by two dozen bunches of decorative kinds. Messrs. WILLIAM SMITH & SONS, Burnside Nurseries, Aberdeen, had also a very pretty and attractive collection, which was much admired.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 24.—At the last meeting at the Coal Exchange, Manchester, there were present Messrs. G. SHORLAND BALL (in the Chair), Warburton, Bolton, Weathers, Backhouse, Cypher, Johnson, and Mills (Hon. Sec.).

The following is a list of the awards made, viz.:—G. W. LAW-SHOFFIELD, Esq., Rawtenstall (gr., Mr. Schill), showed Cypripedium Warneri-Bello, Award of Merit. S. GRATRICK, Esq., Whalley Range (gr., Mr. McLeod), showed Cypripedium insigne Baron Schroder, First-class Certificate; C. insigne, Award of Merit; C. Charlesworthi, Award of Merit; C. insigne giganteum, and C. insigne, a yellow variety. G. SHORLAND BALL, Esq., Wilmslow (gr., Mr. Gibbons), showed Lycaste Ballie (Skinneri and Mesuresiana), First-class Certificate; Lycaste Skinneri Ashfordi, Award of Merit; Odontoglossum insigne splendens, "Ashford var.," First-class Certificate; O. Orstedii majus, Award of Merit; Cypripedium memoria Moensii, First-class Certificate; C. tonsum magnificum, Award of Merit; C. Lecanum magnificum, C. L. giganteum, and C. Arthurianum pulchellum. THOMAS STATTER, Esq., Whitefield (gr., Mr. Johnson), showed Cypripedium Albertianum expansum, Award of Merit; C. insigne Johnsonianum, First-class Certificate; and Cattleya Hardiana Massiana, First-class Certificate. JOHN LEEMAN, Esq., Hutton Mersey (gr., Mr. Edge), showed Cattleya Victoria Regina, First-class Certificate; C. labiata, Award of Merit; Lælio-Cattleya Gotoiana, Odonto. crispum, and Cypripedium J. B. Haywood. WM. BOLTON, Esq., Warrington (gr., Mr. Cain), showed Oncidium Rogersii giganteum, Award of Merit, and Oncidium Rogersii. Messrs. F. SANDER & Co., St. Albans, showed Cypripedium Lecanum princeps, C. nitens, C. Lecanum, C. Theodore Buller, C. John Carder (selligerum majus x thursissimum), Award of Merit; Phaius Ashworthianus, and two forms of Lælio-Cattleya (amethystina x cinnabarina), one of which obtained an Award of Merit.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 20.—A largely-attended meeting of the Society's Executive Committee was held at 265, Strand, on the above date. Mr. T. W. SANDERS in the chair. Reports were received from the Arbitration Committee in respect of protests against the decision of the judges at the November show, and from the Investigation of Sites Sub-Committee, who stated, amongst other things, that the Directors of the Royal Aquarium had agreed to contribute an additional £75 to the prize-list at the November show in 1899.

An interim financial statement was made by the Secretary, and from it we learned that the amount of prize-money awarded at the November show was £330 19s. 6d. It was resolved that the meetings of the Executive Committee should in the coming year take place on August 28, September 25, October 23, November 27, December 18, and January 16, 1900. It was agreed there should be eight meetings of the Floral Committee in 1899, the days and time of meeting to be determined by the Floral Committee. Letters were read from Mr. Henry Deverill, seedsman, Banbury; and from Mr. R. Sydenham, Birmingham, offering special prizes for vegetables, &c., in 1899. These were accepted. An offer from Messrs. Ray & Co. of special prizes for a new variety of Chrysanthemum, was referred to the Schedule Revision Sub-committee. Attention was called to a catalogue of Chrysanthemums, recently issued by Mr. W. Wells, Earlswood, Redhill, which it was asserted contained statements which could not be justified, and which cast serious reflections upon the honour of the National Chrysanthemum Society. After a discussion, in which Mr. Wells took part, he promised not to attempt to distribute his catalogues at the coming December show, and also undertook to withdraw all imputations affecting the National Chrysanthemum Society, and also against the individuals to whom personal reference was made. Fifteen new members were elected.

THE ANNUAL DINNER.

NOVEMBER 30.—A very successful event was the annual dinner of the Society, held in the Crown Room of the Holborn Restaurant on the above date. The unusual *clat* that characterised the proceedings was no doubt mainly due to three causes:—

1. The Committee has at last decided to hold its festive function at a more convenient place than heretofore. 2. The

excellent sides of Sir A. K. Rollit, Knt., M.P., as chairman, and (4). The general good humour of the large company that was present.

For the first time in the history of the Society also, on this occasion, a special invitation had been extended to members of the gentler sex, and this was responded to by the presence of perhaps a score of ladies, a very small proportion of the company, which was, as a whole, quite sufficient for the capacity of the room.

The tables were nicely decorated with Chrysanthemum flowers, and the faces of many members of the company were only partly visible behind the monstrous blooms of G. J. Warren and other flowers that they carried in their buttonholes. The two curious varieties we figure this week were also much in evidence, and were passed around and discussed as novelties, the Chairman remarking that he intended to take home a specimen of each.

Sir A. K. Rollit, who arrived somewhat late, owing to pressure of other engagements, in proposing the Royal Toast, after seeking to connect flowers with Royalty as early as the Plantagenets, said he was glad to be able to remove an erroneous impression that he believed to exist. The Chrysanthemum was indigenous to India. It was fashionable to attribute everything, the mariner's compass included, as having existed previously in China. The Chrysanthemum, however, was a British subject.

Then the toast of "The donors of special prizes," was proposed by Mr. P. Waterer, who incidentally remarked upon the necessity of encouraging newer and more artistic methods of staging the blooms, suggesting a class for twelve vases, five blooms, with stems, in a vase. Mr. Waterer, after another inevitable thrust at the "rust" fungus, offered a prize of £5 for the best Essay upon the subject. The respondents were Mr. J. W. Wilkinson and Mr. H. J. Jones. Mr. Wilkinson said it was a very great pleasure to the Royal Aquarium Company that the class for twenty-four Japanese blooms, in which the Company offered special prizes, was the most popular class at the November Show. Mr. H. J. Jones' response was a record one. His announcement that he would be happy to offer a 1st prize of £25 for a "Vase" class, as suggested by Mr. Waterer, was received by tumultuous and continued cheering. Mr. Jones hoped others of the trade would come forward with 2nd and 3rd prizes.

The Chairman then proceeded with the presentation of the special prizes, consisting of Plate, Medals, &c. The National Challenge Trophy was presented to Mr. Perry, who accepted it on behalf of the Portsmouth Society. Replying to some appropriate remarks from the chairman, Mr. Perry said Portsmouth was always in a fighting mood, and the company might depend upon Portsmouth in the event of entering a conflict doing her best to become victor. The Holm & Memorial Cups were afterwards presented to Mr. W. H. Lees, Trent Park Gardens, Barnet, and to Mr. W. Higga, Fetcham Park Gardens, Leatherhead. The Turner Memorial Cup has now become the absolute property of Mr. Norman Davis, Framfield. The Gold Medal of the Society was presented to Mr. H. J. Jones, and various medals to Messrs. B. S. Williams & Son, C. E. Wilkins, J. Peed & Sons, Aldridge, Barras, &c. Mr. J. T. Simpson, who showed the premier bloom at the last exhibition—one of G. J. Warren—was presented with a painting of the flower.

The toast of the officers of the Society was proposed by Mr. E. Harland, Hull. He said the affiliated societies looked to the mother Society to lead the van. In the question of grouping, he thought there was not the improvement evident at the N.C.S. exhibitions that they could wish, and he believed this was due to the wording of the schedule.

Mr. C. H. Payne, and Mr. A. E. Stubbs (auditor), replied. After enumerating many nationalities represented in the membership of the Society, Mr. Payne said that the only person they claimed in Germany was an Englishman resident there. Mr. Stubbs had something to say about the reserve fund, and evidently feels that this should be increased rather than diminished.

Sir A. K. Rollit made an excellent speech in proposing the toast of the evening, "The National Chrysanthemum Society." He opened the first Chrysanthemum show held in Hull. He felt it to be a public duty as well as a pleasure to accept the invitation to be present that evening. He pointed out certain political lessons that could be learned in the garden, especially that of "continuity of policy." Happily, some were proud of the profession. When in Ireland recently, he asked a man, "Are you a Home ruler?" "Good —," replied he, "no, I am a gardener." Speaking to the refining and educational influence of gardening, combined with a study of botany, the chairman was evidently in favour of the claims of the physiological as against the systematic branch of that study. "The Chrysanthemum," said Sir A. K. Rollit, "so easily propagated, as easily cultivated, and, blooming in November, is one of the most valuable flowers in the category of plants. The National Chrysanthemum Society was an excellent national institution, 'may it flourish for ever, root and branch.'"

After a humorous speech, in which the Chairman toasted the ladies present, "The Press" was proposed by Mr. R. Fife, and responded to by Mr. Geo. Gordon. "The Chairman" was proposed by Mr. T. W. Sanders.

NOTICES TO CORRESPONDENTS.

APPLES: *G. Woolgar*. Probably, our fruit-naming authority did not recognise No. 4, hence its omission from the list we gave in our issue for November 5.

APRICOTS FOR GROWING UNDER GLASS: *G. C.* Any

variety; but very little forcing must be attempted. Moorpark, Early Moorpark, Shipley, Hemskirk, New Large Early (Rivers), and Oullin's Early Peach, are excellent varieties.

BOOKS: *Pine-apple*. We know of no work dealing solely with the cultivation of stove plants.

BOTANICAL: *S. P.* The Snowdrop and the Daffodil are generally placed in Amaryllidaceæ, but some botanists do not consider Amaryllidaceæ as distinct from Liliaceæ. We recommend you, however, to keep the two orders distinct. In the same way some authors consider Pomaceæ to form a separate order, whilst most include it with Rosacæ.

CALANTHE: *J. C.* The bulb seems to indicate that it had not been sufficiently quickly grown, and that in its latter stage it had been subjected to too much water, and too moist an atmosphere, in place of being ripened off in a tolerably dry warm-house.

CHRYSANTHEMUM: *T. S., Roundwood*. The bloom appears to be nothing more than Colonel W. B. Smith. This variety does not always come so good in colour, especially earlier in the season.

CHRYSANTHEMUMS: *Single W. Crimson sport of Madame Carnot?* No, unfortunately there is none of that tint. We know nothing of the sport of Lady E. Clarke. Enquire of some specialist.

DAMPING OF VIOLETS IN FRAMES: *J. G.* This is not infrequently due to local causes, and then it is more difficult to guard against. It will be better if we tell you when damping does not occur, or not to any great extent: When the bed is made on an elevated spot, and in the front of a south wall as a fruit-wall or dwelling; when the foundations of the bed do not consist of stable-dung, either warm or cold, or of leaves partly or wholly decayed; when the soil in which the plants are planted consists of not more than a quarter leaf-mould; when they are not too deeply planted; when the surface of the bed is not more than 9 inches from the glass; when water is not applied in excess of the needs of the plants, and when it is not applied in cloudy or moist weather; when the plants do not touch each other when planted; when air is not given at the sides or backs of the lights soon after the sun has touched the glass, and continued in mild weather till covering-up time; when night air, in small quantity, is not allowed in mild weather; and finally, when no heated linings are used to keep frost out of the frames. As correctives that can be applied now, there are the removal of warm linings, and the substitution of dry stable litter or fern; the sloping of the soil away from the sides of the frames; affording plenty of ventilation preferably at the sides of the lights, and on the opposite side to the direction of the wind, not forgetting night ventilation, if it be only a 4-inch opening at the back of each light; keeping flower-pots filled with quicklime in the frames, removing these when it is slaked and no longer absorbent; and applying powdered charcoal and silver sand to the depth of 1/4 inch over the surface. Dusting the plants with flowers-of-sulphur would kill the fungus—the cause or result of the damping.

DRIED LEAVES: *A. McD.* We cannot tell what they are. They may be the leaves of some terrestrial Aroid. Perhaps they will spring up next year, when, if you send us a fresh leaf, we will guess again.

ERICA HYEMALIS: *W. B.* We think as you do, that something injurious has been afforded at the root, perhaps too strong a dose of artificial manure. There is no mildew or other fungus present.

EXAMINATION IN HORTICULTURE: *A. S.* In the first place, you should obtain from the Secretary of the Royal Horticultural Society a syllabus; you would then learn what subjects you would require to become proficient in. Having done so, use must be made of the means of instruction existing in neighbouring towns, in the form of polytechnics, mechanics' institutes, public libraries, botanic gardens, and by correspondence classes and home study, to perfect your horticultural education. Manchester, Sheffield, Rochdale, Stockport, Chester, are rich in means of instruction.

GARDENERS' FRIENDLY SOCIETY: *L. P. G.* Assuming that you mean the United Horticultural Benefit and Provident Association, the proper person to afford information is Mr. W. Collins, 9, Mutin-dale Road, Balham, London, S.W.

HOUSES AND PLANTING: *J. W. R.* The houses and lines of crops as per sketch sent run south by west. This would be of lesser importance as regards the lines of crops, but we think it a disadvantage to span-roofed glasshouses, which should rather run in the direction of south-north, so that

the amount of sunshine striking the two sides is about equal in duration.

INSECTS IN ORCHID MOSS: *Alpha*. The insects are Springtails (Poduridae). They are often very abundant in dead leaves and in wet places. They are not likely to be injurious; but if troublesome, their habit of jumping might be taken advantage of, and some tar or other sticky substance put in their way to catch them.

MACLURA AURANTIACA: *H. J. R., Firenze*. The fruit is scarcely eatable; it is of a fine golden-yellow when ripe. The species is a native of the southern United States, and the climate of northern Italy should be sufficiently warm to enable the fruit to ripen in the warmer situations, say, against south or west walls, or rocks.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—*J. H. H.* 1, Rosemary Russet; 2, Golden Noble; 3, London Pippin; 4, Fearn's Pippin; 5, May be a small Cox's Pomona; 6, Round Winter Non-such.—*William von Schroder*. Pear appears to be Beurré Diel, much decayed.—*W. C.* 1, Beauty of Kent; 2, Worcester Pearmain; 3, Queen Caroline; 4, Not known.—*M. R. S.* Apples: 1, Minchull Crab; 2, Not recognised; Pear decayed.—*J. M.* Apple: Beauty of Kent.—*A. W. Holmes*. Keswick Codlin, or near ally.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number. — *A. Bartlett*. *Oncidium micropogon*.

ONCIDIUM LINDENI: *Veritas*. If you refer to *Odonoglossum Lindeni*, a large-bulbed, yellow-flowered species, it is not very free-flowering. When it flowers, it is generally in late summer and autumn. It requires to be kept in the cool-house for the greater part of the year; but when actively growing, the Cattleya-house is not too warm for it.

ONCIDIUM SPILOPTERUM (SAINTLEGERIANUM), &c.: *Veritas*. It usually blooms in late summer and autumn. It is a cool-house plant. The *Selenipedium* of the group to which you refer, viz., *S. Dominicanum*, *S. longifolium* Roezli, &c., are among the easiest to cultivate. They grow best in a compost in which there is a good proportion of loam-fibre. They should be wintered at the cool end of the intermediate-house, and freely watered all the year. In summer they should be carefully shaded.

PEACH LEAVES FUNGUS: *A. P.* The fungus is *Puccinia Pruni*, Pers., very distinct, structurally, from the *Chrysanthemum-rust*, although the two fungi superficially resemble each other. These fungi cannot pass from one species of plant to another.

PLANT IN CENTRE OF LAST SUPPLEMENTARY ILLUSTRATION: *L. V. D. K.* *Aralia Sieboldii*.

PLANTING RICHARDIA IN A POND: *Arum Lily*. Planted in pots sunk in the pond at 18 inches from the surface, they will survive all but our severest winters; but planted at the sides, or in shallow water near the latter, there is always the risk that they will be killed by cold. You must plant when the plant has made a considerable amount of growth, that is, the leaves should range above the water.

VINES FAILING TO MAKE GOOD GROWTH: *Gardener*. There must be something amiss with the soil, or chemical manures in too strong doses have been applied, or heavy applications of soot to the soil to account for this stunting of growth, and loss of the tips of the roots. Up to a recent date the vines made fair progress, that is, till the roots reached a certain distance from the stem. It should not be difficult to discover what this cause is, and less so if all the vine-roots are affected at about the same distance. Have you employed turf that is infested with weevil-grubs or wireworms? Turning it up would reveal them if present.

COMMUNICATIONS RECEIVED.—*C. H. P.*—*S. P.*—*W. E. G.*—*W. T. T.*—*E. A.*, Paris.—*W. R.* & Co.—*Sander & Co.*—*J. C.*—*W. C.*—*A. H.*—*H. R.*—*S. J.*—*G. Mackinley*.—*A. D. C.*—*H. W. W.*—*D. T. F.*—*A. J. L.*—*Expert*.—*G. B. M.*—*A. Worsley*.—*J. F. McL.*—*W. A. C.*—*G. Henslow*.—*E. M.*—*T. B.*—*W. H. D.*—*G. S. J.*—*L. Arnott*.—*J. B.*—*A. D.*—*J. O'B.*—*T. H. S.*—*H. D.*—*G. E. M.*—*Junior Reader*.—*J. L.*—*C. R. T.*—*J. L. L.*—*T. C. M.*—*N. Y. Z.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*F. Sander & Co.*—*Deverill & Co.*—*Mrs. B.*—*E. A.*, Paris.

(For Markets and Weather, see p. x.)



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 10, 1898.

WILLIAM LAWSON, AND HIS WORKS.

LAWSON was by no means a copious writer, two short treatises only having appeared from his pen, one, *A New Orchard and Garden*, and bound up with it, *The Countrie Housewife's Garden*. The many editions, particularly the earlier ones, through which these passed in company, are not difficult to trace; but with the first there is some difficulty. The last-named work, printed by Bar. Alsop for Roger Jackson, bears date 1617. It is bound with the former, which was "Printed at London by Bar. Alsop for Roger Jackson, and are to be sold at his shop neere Fleet Street conduite, 1618," this forming the first part of the book. Several passages of *The Countrie Housewife* show it to have been written after *An Orchard*, though, as we have seen, it was printed one year earlier.

The late Dr. Hogg, in *The Fruit Manual*, has quoted a few lines from Lawson, and gives date "1597." Then, in the second edition, 1623, which has added to it, *The Art of Propagating Plants*, and in the copy I possess also, *The Husbandman's Fruitful Orchard*, which is a much older treatise, the lengthy title-page is different from that of 1618, one clause of which reads:—"All founded on the principles of Art and precepts of experience, being the labours of 48 yeeres of William Lawson." The end of this clause in the second edition reads thus:—"Now for the second time corrected and much enlarged by William Lawson." It is corrected, indeed, but not enlarged; nor can one understand how a second correction could have taken place, unless there had been a previous one, which, again, could not have occurred in a first edition. Then Dr. Hogg's short quotation contains two words spelled differently from the same words in the first edition, and three words differently from those in the second. Lawson, indeed, confesses in the dedication, to his having possessed the MS. of *An Orchard* for a long time previous to its publication, and it is not improbable that copies in MS. may have been in circulation for many years. In any case, there appears to be mistakes somewhere. The printer of the 1623 edition was John Haviland, and Jackson the publisher. Both editions are small quarto, black letter, and illustrated with many quaint engravings. The second is the more correct edition.

A third edition appeared in 1626 in ordinary type, and with some of the illustrations wanting. Five years later a fourth edition appeared, but this, along with five of Markam's little books, were bound up together, and under the

designation of *A Way to Get Wealth*, these, as one work, passed through as many as fifteen editions before the close of the seventeenth century.

Though little is known of Lawson, it is yet possible, with the aid of his little book, to obtain a very fair conception of what manner of man he was. He was no visionary, as Bacon to a large extent was, nor was he like his contemporaries who wrote on rural affairs, a copyist. He claims for himself to have written solely from experience and practice, and he is certainly one of the earliest original writers on Gardening, from every point of view, purely English. He was well read, but he refused to accept from others what he himself had not proved from practice to be correct. It would be very wrong, however, to assert that everything he penned was original, or in what truly was so, that his opinions were always unassailable. That would be too much to expect of anyone, even now. Lawson, however, believed what he wrote to have been consistent with his experience, and he possessed the happy knack of permeating his writings with much of his own personality. Thus it happens, that those who are acquainted with his works, are, notwithstanding his unwitting blunders, inclined to feelings of real respect for the aged author.

In *An Orchard* he has written at his best. His style, though a little quaint, is always lucid, always charming in its simplicity; often, as on "Ornaments," rising to the highest prose, and in no case ever descends to vulgarity, or to language impossible to read now.

The *Countrie Housewife's Garden*, on the other hand, is as "drumlie" as ditch-water, and possesses no feature of any particular interest. It is, moreover, written in English of a later date; and if the work is really Lawson's, one feels vexed that he should have conjoined it to *An Orchard*.

Lawson, had time and circumstances permitted, might easily have been the author of an earlier *Silva*. As a matter of fact, Evelyn, who was struck with the reasoning by which our author built up the strange theory that, by means of proper culture, Apple-trees were capable of retaining life and fruitfulness for a thousand years; and timber-trees might "require the yeeres of divers Methushalahes," did in 1664 embody this, as well as other long quotations, in his *Silva*.

Not the least interesting matter in connection with Lawson is the place of his residence. Some writers, who must have skimmed his book, have placed it in Holderness, but he himself affords no information of having ever lived there, and he mentions it only as a bit of low country, eminently suited to "fatten cattell." On the other hand, nothing need be plainer than that he was a native of Teesdale, in connection with which, in the chapter "On Foyling" he mentions the occurrence of the stranding of a whale which "came aland at Teemouth in Yorkshire, hard by us." The fact that he lived so far north lends additional interest to his writings, proving as it does the wide field that gardening had covered at so early a period, and the strange fact that English gardening should be represented so well by this "honest countryman."

As we get closer to him, we find Lawson to have been a gentleman, possibly of small estate, and limited means. He was of retired habits, and found his pleasures chiefly in fruit-growing, gardening, and pursuits of a kindred nature. He, however, laboured not over much, "For what," he remarks, "is greedy gaine without delight, but moyling and turmoyling in slavery." Circumstances fitting, he might have been an earlier Isaak Walton, for he loved to sit on a mount in his orchard, and from that elevated position to "angle a peckled trout or sleightie eele" from the silvery river flowing past. He played bowls, but preferred as a more manly exercise to stretch his arms at a "paire of byts." Music was a great pleasure, and it was his delight to sit out-of-doors listening to the playing of instruments, and to voices singing. Nay, we are left just a little dubious whether he himself was altogether ignorant of the fingering of the Sweet Recorder.

A quiet humour pervaded his atmosphere, and so he liked "a maze well-formed a man's height where one's friend might wander in gathering of berries till he cannot recover himselfe without your helpe."

Possessed of a nice eye, he loved to have his walks long and straight, and his orchard-trees "standing in comely order which way soever you looke." His borders and squares planted with flowers intermingled, were orderly placed. His love of Nature was supreme. Songbirds were his dear friends; though it was undoubtedly a "griefe" that the blackbirds and throstles which "sing loudly in a May morning, and delight the eare much, should also eate ripe Cherries or berries." Nightingales, however, he avers, "with their several notes and tunes with a delightsome voice, will beare you company night and day. The gentle Robin-red-brest will helpe her. Neither will the silly wren be behinde in summer with her distinct whistle. Bees, which sing and sit and feede upon flowers and sprouts make a 'pleasant noyse and sight,' loving their friend and hating their enemies."

Of all his pleasures, however, none exceed those derived from the fruit and the flowers of his orchard and garden. He declares "delight to be the chiefe end of orchards." Everybody delights in them, even the very old may find their greatest pleasures there. Paradise itself was but a "garden and orchard of trees and hearbs full of all pleasure. What," he asks, "more delightsome than an infinite variety of sweet-smelling flowers? colouring not onely the earth, but decking the ayre and sweetening every breath and spirit."

Of all flowers his favourite was the "damaske" Rose, but his love for Roses extended also to the "red, velvet, Double Provence, Sweete Muske, and single and double white Roses." Banks of Violets and of Camomile were raised at every available position in his orchard. Walks also were planted with Camomile, and all walks were bordered with sweet-smelling herbs, such as Lavender, Hyssop, &c., and Daisies and Pinks. Behind these the borders were overflowing with a profusion of common but sweet flowers, which also reached the kitchen-garden, but only the finest were admitted into the summer or flower-garden, where grew his Carnations, of which we may be sure he was intensely proud, seeing he had some as large as Roses. Rosemary grew about his door and sweet Eglantine, and it was embowered with trailing Woodbine.

Like Bacon, he cared not for a knot, though he had one in his garden. From Bacon, however, he differed, in that he framed some of his hedges to the shape of men armed for the field, ready to give "battell; or swift-running greyhounds, or of well-scented and true running hounds to chase the deere or hunt the hare;" quaintly adding, "this kind of hunting shall not waste your corne, nor much your coyne."

It is pleasant to note, that in spite of his desire to make profit of his orchard, half an acre of which he considered to be worth an acre or even two of corne, he was not exacting as a master. The gardener, from a list of his duties, held no sinecure's office; but Lawson declares, where there is much to do, a sufficient number of men must be provided to enable the gardener to overtake his various work. A gardener, he remarks, must not be a "lazy lubber;" nor did he care for one who at the same time was a "scholist," and ignorant of his duties. However, to a man endued with capacity and possessed of knowledge, he added to his wages—unfortunately not mentioned—the "fee;" belonging to his place. The latter consisted of "superfluity of herbes and flowers, seedes, graffes, sets," and beside other offall "that fruit which your bountifull hand shall reward him withall will much augment his wages." R. P. Brotherston.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

TWO NEW FERNS FROM BRITISH GUIANA.

DANÆA NIGRESCENS, *Jenman, n. sp.*—Rootstock large, very stout, erect or decumbent; stipites caespitose, stiffly erect, ligneous, wood dull, dark-

brown or blackish, puberulous or glabrous, devoid of nodes, $1\frac{1}{2}$ to $2\frac{1}{2}$ feet long, solid, somewhat angular when dry; fronds 2 to $4\frac{1}{2}$ feet long, $1\frac{1}{2}$ to $2\frac{1}{4}$ feet wide, pinnate, with several erecto-spreading lateral pinnæ 2 inches apart, $\frac{3}{4}$ to $1\frac{1}{4}$ foot long, 2 inches wide, cuneate at the base, and shortly stipitate, the apex cuspidate and sharply serrate, slightly narrower in the lower half, but not distinctly tapering, finely scaly along the costæ, and minutely so over the under surface, chartaceous, the same colour on both sides, the margins even or crenulate—repand when dry, terminal pinna absent; veins very close, once forked from the base or near it, curved as they approach the margin; fertile fronds central, taller, pinnæ $\frac{3}{4}$ to nearly 1 inch wide; petiolate, $\frac{1}{4}$ to $\frac{1}{2}$ inch, terminal present, conform, petioled to $1\frac{1}{2}$ inch; stipes and rachis hollow and flattened when dry, much stouter than in the barren, and as thick as one's little finger, both turning finally black; synangia as in all the other species.

British Guiana, in swampy forest of the upper Demerara River, near the banks. A very large species, 5 to $6\frac{1}{2}$ feet high, standing stiffly erect. It has the same pinnate habit as most of the other large species, but differs strikingly in the hard, ligneous character of the stems, which, without fertile fronds, suggests doubt as to its being a *Danaea* at all. It is the largest species of all. *G. S. Jenman, Demerara, November 1, 1898.*

PTERIS (EUPTERIS) HARRISONÆ, *Jenm., n. sp.*

Rootstock small, fibrous, tufted, scaly; stipites caespitose, slender, erect, dark brown, glossy, naked, 3 to 5 inches long; fronds shallowly 3 to 5-lobed, $1\frac{1}{2}$ to 2 inches wide and deep, papyraceous, transparent, densely pellucid, dotted bright green, paler beneath, glabrous and rather shining, base deeply and widely cordate, lobes broadly rounded, as are the sinuses between; veins flabellate, forked near the base, terminating within the margin in clavate apices, conspicuous by the translucency of the parenchyma, primary branches costate, dark brown, like the stipites, raised beneath, the colour evanescent in the outer third; sori continuous all round the even margin from the apex of the stem; involucre narrow, pale, even, unbroken.

British Guiana, on rocks arising from the great basin at the base of the Kaieteur Fall, growing in masses, each of the aggregated plants forming a small tuft. The thin, pellucid substance, free veins, terminating well within the edge, and sinuously-lobed margin, both lobes and hollows rounded and even-edged, without incisions, mark it well from any plant in the genus. It is named after Mrs. Harrison, the wife of the Government Analyst of British Guiana, who is the third white lady who has visited that great 800-feet deep fall since its discovery by Barrington Brown on his geological survey of the colony, April 24, 1870. *G. S. Jenman, Demerara.*

ORCHID NOTES AND GLEANINGS.

MALFORMED ORCHIDS.

M. LINDEN, of the Horticulture Internationale, Brussels, obligingly sends us flowers of Orchids which are interesting from a morphological point of view. In one of these, a flower of *C. Spicerianum*, or one of its derivatives, the upper sepal is absent, the two lower ones connate into a single piece, and deflexed, so as to fall into the middle line. There are no lateral petals, or rather there is one petal with the form and appearance of a lateral petal, but it is placed in the central line opposite to the normally-shaped labellum. The column has no staminode, and bears only one anther on one side. The stigma is shield-shaped, convex, divided by a central furrow into two instead of three lobes. The ovary is one-celled, with two parietal placentas. In this flower therefore the principal features are the diminution in the number of parts and their arrangement so as to form a dimerous flower.

In a flower of *Cypripedium Lawrenceanum*, the state of affairs was quite different. In the first place two flowers were connate at the base. In one

flower there were four sepals, somewhat spirally disposed, one lateral petal, no lip, but an erect column, with three petaloid staminodes, and two perfect anthers. In the other flower there were six perianth segments, three staminodes, and two anthers. The chief interest attaching to such flowers arises of course from the insight they afford as to the original construction of the flower. Orchids are apparently so abnormal in their forms that it is satisfactory to be able to see there is order in apparent disorder. The expression "Freaks of Nature," is only used to cloak our ignorance. Nature is not capricious, there is order, method, and purpose in all she does, only we poor blind ones cannot always see it.

Two singular abnormal variations in two allied species of *Cypripedium*, in which the distinguishing characters appear in the lower sepals alone, have been received. One, of *Cypripedium Charlesworthi*, from P. J. Tuckett, Esq., Yeldhall Manor, near Twyford, has the lower sepals of the usual greenish hue, having on each side a border half-an-inch wide, of a blush-white colour, which is veined with purplish-rose; in fact, of precisely the same colour as the upper sepal. The other, from Mr. W. Goodliffe, Cambridge Nurseries, Northcourt Road, Worthing, is a bloom of a good form of *Cypripedium Spicerianum*, in which the lower sepals are of the usual pale-green tint, and larger than ordinary, the striking departure being the appearance of some pure white blotches on the margin, and faint traces of lines of white.

CYPRIPEDIUM OR PAPHIOPEDILUM.

In the current number of the *Botanical Magazine*, the editor, Sir Joseph Hooker, thinks that his reasons for adopting Pfizger's generic name are "botanically unassailable; nevertheless, I do not object to the substitution of *Cypripedium* in common parlance." The China Aster *Callistephus hortensis* may still be called by its popular name, although the plant differs by important characters from all the species of the vast genus Aster. Why not consider *Paphiopedilum* to be a sub-genus of *Cypripedium*, and so avoid the use of the former name in gardens?

AUTUMNAL SNOWDROPS.

It is difficult to find a satisfactory collective name for the Snowdrops which flower in late autumn and early winter. Possibly "early Snowdrops" would be better than "autumnal Snowdrops;" but this title seems a little out of place for flowers blooming when the year is dying. Yet they come so late in the season with us in the north, that we may well doubt the propriety of calling them autumnal.

However this may be, we are more concerned with their value in the garden than with the appellation given them. Here, again, there is room for some difference of opinion, for there are many who look upon them as "born out of due time," and as lacking the price-less associations which endear to us the "early herald of the infant year."

Yet their beauty is equal to that of the "Fair maids of February." Their purity is in nowise lessened because the chaste blossoms are exposed to the winds of the last months instead of the first of the year. Their habit is as graceful, their markings as elegant. If the garden is dreary in November and December, a glimpse of one of these Snowdrops brings keen pleasure when we see it dangling from its stalk on the slopes of the rock-garden. Were these Snowdrops better known, they would be better cared for, and more widely grown.

The autumnal Snowdrops are found under various specific names; but it is to be feared that there is little difference between many of the plants except in time of flowering. For practical purposes they may be classed as only varieties of *Galanthus nivalis*—our common Snowdrop. Some, however, are distinct, from the fact that the foliage has a distinctly visible glaucous line down the centre of the leaves; the only exceptions, indeed, with which the writer is acquainted being the Snowdrop known as *Galanthus cilicicus* (figured in the *Gardeners' Chronicle*, February 5, 1898, p. 79), and *G. Rachelæ*. Perhaps this glaucous line may appear in some of the plants of

G. cilicicus, but it does not seem present in any of the specimens I have seen. *G. Rachelæ* practically consists of the progeny of one or two bulbs, so that no variation is to be expected in the few plants of that sub-species or variety in cultivation.

Nominally the first of these Snowdrops to flower ought to be *G. octobrensis*, originally brought from Albania by Lord Walsingham to the Rev. Harpur-Crewe. This Snowdrop, however, does not flower before the end of November here, and the first to bloom this year was *G. cilicicus*, which has, moreover, the advantage of being a more robust grower, and it has finer flowers.

Galanthus Olgae, originally found on Mount Taygetus, Greece, by Orphanides, was for some time lost to cultivation, but a Snowdrop has again been introduced under the same name. I have not been very successful with this *Galanthus*, which should flower in October, and after failing to flower it for two years in succession, it has now disappeared.

G. coreyrensis, originally received from Corfu by Mr. Harpur-Crewe, usually flowers in December, and is rather weak in growth.

Two rare autumnal Snowdrops which I am fortunate to possess through the kindness of Mr. F. W. Burbidge, who received them from Professor Mahaffy, by whom they were found, are *G. Rachelæ*, and *G. Elææ*. The former was obtained on Mount Hymettus in 1886. It is more robust than *G. Elææ*, and is noteworthy as being without the glaucous median line down the leaves. It flowers in December.

G. Elææ is rather weakly in growth, and has small flowers. Among the best of the autumnal Snowdrops I have grown were some received by way of Holland under the name of *G. octobrensis*. Among these Snowdrops names, however, count for little.

The autumnal *Galanthi* are more delicate, as a rule, than those that bloom in the spring, and prefer, I am of opinion, a lighter soil. Mr. Boyd, of Faldonside, advocates lifting them after flowering, but I have not found this to be necessary. They can never, perhaps, reach the position in our affections that the Snowdrops of spring are given; but those who desire their gardens to yield something of interest at all times, will find them acquisitions for their rock-gardens or borders. *S. Arnott, Carsethorn, by Dumfries, N.B.*

MARKET GARDENING ABOUT RAYLEIGH.

THE GLASS-HOUSES.—Early in 1897, Mr. A. Wright purchased the freehold of 33 acres of land (including one or two cottages situated thereon) on the confines of the parishes of Rayleigh and Hockley, about a mile and a half north-east of Rayleigh town and station, the latter being on the Southend branch of the Great Eastern Railway Company's main line from Shenfield. Having completed his purchase and selected a suitable site, Mr. Wright lost no time in erecting thereon a block of thirteen glass-houses for the production of Cucumbers and Tomatos of the best quality for sending to Covent Garden Market, taking a good crop of Cucumbers and Tomatos respectively out of each of the thirteen houses the same year.

The glass-houses are each 200 feet long and 12 feet wide in the clear between the piers, being $12\frac{1}{2}$ feet from centre of piers crossways, thus giving a total end frontage of 162 feet 6 inches. The roof consisting of rafters 8 feet long, affords a capital angle to the sun's rays, and at the same time plenty of head-room. Twelve out of the thirteen houses are built on the "pier system," that is, instead of having continuous division walls the entire length of each house, a series of 9-inch brick piers are built at intervals of 7 or 8 feet for supporting "valley gutters," consisting of pitch-pine plank, 11 inches by $1\frac{1}{2}$ inch, wall-plates being secured on each side of these for fixing the rafters on, and at the same time forming the gutters, when sanded and tarred, for conducting rain-water from roofs to tanks provided for this purpose right across the thirteen houses, at 50 feet from each end. The houses (spans) run north and south. Thus, it will be observed that the

said twelve houses only have two continuous side-walls, one of these forming the division-wall between them and the thirteenth (No. 1) house, which is used for raising the young Cucumber-plants, &c., in, and for this purpose it is provided with a heating apparatus exclusively to itself and two extra hot-water pipes; two flows running side by side (flat-wise) close up to the walls on either side, and returning alongside the central pathway on each side.

THE HEATING ARRANGEMENTS.

The twelve houses, requiring one and the same temperature, are heated by six Thames Bank boilers, three being fixed side by side in two out of the three stoke-holes; the third one containing the heating apparatus belonging to the propagating-house. The six boilers occupy a central position to the end frontage of the glasshouses, and pretty close to the cart-way running in that direction south, and close up

houses of similar dimensions to the block referred to above, three more "Thames Bank" boilers being put in for heating these. This extension of glass-houses will give a total continuous end frontage of 237 feet 6 inches, and is a satisfactory proprietorship for any grower to achieve in less than two years—but it is especially creditable in the case of a young man like Mr. Wright. The nineteen houses will be planted with Cucumbers by the middle of January next, and by the end of the following July the Cucumbers will be replaced by Tomato-plants. Satisfactory returns having been extracted from the Cucumber-plants while remunerative prices prevailed; the Tomatos yielding heavy crops of fine fruit at a time (October and November) when the supplies hitherto obtained from plants growing in cool-houses and in favourable situations out-of-doors have become exhausted. Mr. Wright's Tomatos always command "top-prices" in the market.

intervals crosswise on the three pipes on either side of the pathway; lighter strips being tacked on these pretty closely together in an opposite direction for the reception of a coating of cinders and fine coal-ashes of sufficient thickness to stand the pots containing the Cucumber seeds on. When the young plants have attained a height of 3 or 4 inches, they are shifted into 6-inch pots, using the same description of compost as before; a large quantity of this being stacked at one end of the staging a few days beforehand, to ensure its being of the same temperature as that in which the young plants are growing. A thin stick is put to each plant for support in due time.

GETTING READY FOR PLANTING.

Meanwhile the several houses are being put in readiness for the reception of the Cucumber-plants the first or second week in January. This is rather a "big" job, involving, as it does, the removal of



FIG. 118.—*CISSAMPLOS APPENDICULATA*.

A remarkable Bengal species, shown by Sir T. Lawrence, Bart., at the meeting of the Royal Horticultural Society on Nov. 22. Colour of the flowers white, with purple and chocolate-coloured markings. See *Gard. Chron.*, Nov. 26, p. 391.

to the forcing-houses. A 6-inch flow and return pipe connecting each trio-boilers with the 6-inch mains (flow and return) which run east and west immediately inside each and all of the twelve houses, and from which a 4-inch flow is taken on the either side of the individual houses, the flow-pipes being fixed close up to the piers the entire length of each house, and returning on each side the pathway—four pipes in each house, the forty-eight pipes giving and maintaining a good uniform degree of heat in the twelve houses. A throttle-valve is fixed in each 4-inch flow-pipe, pretty close to the 6-inch main, thereby affording the means for securing a good circulation of hot-water in each and all of the pipes.

THE CUCUMBER-HOUSES.

By way of recording Mr. Wright's enterprising spirit, I may mention that he is now adding six more

RAISING THE PLANTS.

Mr. Wright sows his Cucumber-seed in the first or second week in December, singly in 3-inch pots, using fine soil and short manure (from London stables) in equal proportions. This having been mixed and placed in the propagating (No. 1) house a few days before being used, becomes nice and warm, a circumstance which, when taken in connection with a high atmospheric temperature being maintained, causes the seeds to germinate quickly and evenly. I may remark that the propagating-house is the first in the block which is planted with Tomatos, and the last with Cucumbers, consequently the crop of Tomatos is cleared off the plants in this house first, a fact which allows the exhausted plants to be removed, and the house to be put in readiness for the raising of the necessary number of young Cucumber-plants—about 5,000. Stout pieces of board are placed at short

the soil which formed the Cucumber ridges in January last, and which was levelled in July following when the Tomatos were planted. This has to be wheeled out of the houses, and a like quantity of new compost brought in to form fresh ridges. The average depth of the soil of the garden is 1 foot, this being heavy and resting on a substratum of clay, the latter containing much sand. This soil, rough and fine, as it is taken from the field or "store-heap," added to a like quantity of well-decayed stable-manure, constitutes the compost in which Mr. Wright grows enormously heavy crops of best quality Cucumbers. The soil and manure is well mixed before being wheeled in, and formed into continuous ridges pretty close to, but quite clear of, the flow hot-water pipes. As a guide to readers of the *Gardeners' Chronicle* who may require information on this point, I may say that Mr. Wright gives eight

barrowfuls of the mixture indicated to each 9 feet length of hot-water pipe, the width of the base of the ridge of soil being from 2½ to 3 feet.

The compost consisting, as stated above, of soil and manure in equal parts, naturally ferments more or less when placed in bulk in close proximity to hot-water pipes in a close house, thereby doing away with the possibility of the plants experiencing any check when planted on the crown of the individual ridges by the roots coming in contact with soil less warm than that in which they are growing. The plants are set at 2 feet apart on the ridges, the soil being pressed firmly about them in planting.

TREATMENT OF THE PLANTS.

These receive their first stopping at the fourth wire from the bottom of the trellis, being stopped once again before allowing them to reach the top wire. The lateral growths are pinched when they have extended about 1 foot on either side the main stem, the sub-laterals being stopped at from one to four joints, according to circumstances; that is, they are stopped at one joint where there is no available trellis space to furnish, and at four joints where the reverse is the case. As soon as the roots begin to push through the sides of the ridges, a good surface-dressing of well-rotted stable-manure, that is not likely to become unduly heated after it is subjected to a minimum temperature of 70°, is laid on. The rooting medium is kept uniformly moist throughout the whole period of the plant's growth, and abundance of water is distributed in the houses during the period indicated. The Rochford is the variety of Cucumber which Mr. Wright depends upon.

TOMATOS.

Seed for furnishing plants for planting about the middle of July is sown in the middle of the month of May, and the plants are allowed to become pretty hard in texture of stem-growth before being planted. Mr. Wright is convinced that by having the wood of the young plants pretty firm before being planted, they do not at once rush into growth, which they would do if the plants were transplanted before the pots had become pretty full of roots, viz., by being root-bound the roots do not lay hold of the soil so quickly and make such a sappy growth as would otherwise be the case. A space of from 20 to 22 inches is given between the rows, and a space of 1 foot from plant to plant in the row, the plants being from 6 to 9 inches high when planted out. The individual plants are supported by a length of soft string fastened loosely round the stems close to the ground, and then secured to the wires overhead, and as the plants increase in growth they are simply twisted round their respective strings, thereby tightening the strings, the operation being repeated until the top wire is reached, all side or lateral growths being persistently pinched out. Plants thus treated, in addition to the fact of their being grown in the rich compost prepared for the Cucumbers, and in a free circulation of fresh air, make extra large stems, show plenty of large clusters of strong flowers, which set freely, and the fruit develops to a large size. The variety which Mr. Wright mainly depends upon is "Limbury," one of his own selection. It is a heavy cropper, the fruit being smooth, round, and satisfactory in size and colour.

On the occasion of my last visit (October 24) I found Mr. Wright busily engaged in his large packing-shed, packing for London, several men gathering the ripe fruit, while others conveyed it to the shed, and these Mr. Wright himself packed into peck-baskets (200) for despatching to market that afternoon. Out of this number there were very few pecks of "seconds;" in short, I never before saw such magnificent crops of fine Tomatos—a total yield of 12 tons being secured from the thirteen houses.

THE WATER SUPPLY.

In the summer of 1897, Mr. Wright came to the conclusion that the supply of water obtained from the rain-water tanks mentioned above, and from a small streamlet close by, which was made to empty itself into the said tanks, was likely to prove inadequate another year; so a few months later he

made a good-sized pond a few yards north of his glasshouses, and into which the streamlet indicated ran. The main source of supply, however, is the drainage from the adjacent hills, the result being 6 feet depth of water in the pond during the months of June and July last; but this depth was considerably reduced by the middle of October. All the same, the supply was ample—a circumstance which went to prove that Mr. Wright was justified in having the water laid on in all his houses during the early summer months. The pumping machinery is fixed on the bank of the pond, a strong galvanised iron tank, capable of holding 1000 gallons of water being placed on top of the engine-house, the bottom of the tank being a little higher than the ridge of the several glasshouses, thereby affording a good pressure when the water is being distributed in the houses through three delivery-hoses at the same time.

In conclusion, I may say that Mr. Wright learnt his business in a good school, and that he is always pleased to give practical advice to those of his neighbours whom he can see by a glance are in need of it, being of opinion that there is plenty of room in the trade for those embarking in it as a means of livelihood. Simultaneously with the erection of the first block of glasshouses, Mr. Wright had dwelling-houses put up for himself and his foreman. *H. W. Ward, Rayleigh.*

SOME DEVONSHIRE GARDENS.

(BY OUR SPECIAL COMMISSIONER.)

(Continued from p. 387.)

BISHOPSTOWNE.—At Bishopstowe, Torquay, the residence of Mrs. Hanbury, the large bushes of the common Fuchsia are remarkable. These are met with in many parts of the garden. Many of the plants have a number of stems coming from the base, some of which are as thick as one's arm. One that I measured was 10 feet high, and 16 feet through; whilst another plant, equally high, was just 25 feet in diameter. The local climate seems to suit these admirably.

Upon the lawn I noticed a grand specimen of *Spiræa Lindleyana*, 10 feet high, with a large number of spikes of its white feathery flowers. This plant is so seldom seen, and is of such imposing a nature, that it is one of the most desirable species to plant in the sunny south. Another grand *Spiræa* close by is *S. arifolia*. *Buddleia globosa* is also a grand plant, some 50 feet in circumference.

Another most useful shrub was gay with its pale blue flowers, and at the time of my visit added a peculiar charm on account of the rarity of its colour—I refer to *Ceanothus azureus*. I have met with this plant several times in this district, and can recommend it to planters. *Rubus speciosus* was covered with its white flowers. In the pleasure-grounds were many perfect specimens of choice species of Conifers, Beech, and other ornamental trees. The terrace was gay with Roses, and the house almost enveloped with *Ampelopsis Veitchi* and other climbing plants. Capital effects were obtained in the several flower-gardens with bronze, bicolor, and tricolor *Pelargonium*, and several Ivy-leaved varieties were flowering freely.

In the glass-houses were good crops of finely-coloured Grapes, and of Peaches and Nectarines; the former especially were a great credit to Mr. Moirist, who is a most painstaking gardener. Melons had been good, and Tomatos were ripening well.

A capital lot of *Dendrobium*s were making fine growth; *Cattleyas* and *Lælias* also looked well. *Begonias* and *Cyclamens* in various stages were satisfactory.

The kitchen-garden is maintained in neat and good order, and the crops generally were satisfactory.

KILLERTON, the seat of Sir Arthur Acland, Bart., may be easily reached from Silvertown station, on the Great Western Railway, and by road is 7 miles from Exeter. The family have for some three centuries made their home in this district. The house was built in 1788, but it was much enlarged by the grandfather of the present baronet. Of Sir Thomas Dyke Acland, it is only necessary to remark that the

position he occupied in the county and in the country was evident from the universal respect shown in May last, when he was laid to rest in the presence of a large company of sorrowing friends.

Killerton has many fine features. The gardens and park are now in excellent keeping, and are under the care of Mr. J. Garland, who has for forty years had charge of them. The park is of great size, beautifully undulating, and it affords many fine scenic effects. It was very interesting to listen to Mr. Garland as he referred to choice trees, as single specimens or clumps, *Coniferae* or deciduous trees that had attained a height of 40 and 50 feet, and were planted by him as saplings, &c., during the earlier years of his charge. The planting was done with great discrimination, and whilst there are *Coniferae*, forest trees, singly and in groups, there are also splendid vistas between. Nearing the mansion, which was charmingly covered with climbing plants, I noticed *Akebia quinata*, *Stauntonia latifolia*, *Chimonanthus fragrans*, *Magnolias*, *Roses*, *Euonymus*, &c. Here are specimens of *Cedrus Deodara*, seedling plants from which exist in various parts of the park. *C. Libani*, of unusual size, and specimens of *Larch* also, of large proportions. Of *Sequoia gigantea* there are noble trees in splendid vigour. Avenues of *Cupressus sempervirens*, include trees that are losing some of their earlier beauty, and as opportunity offers they are being replaced by medium-sized plants of *C. Lawsoniana erecta viridis*. *Pinus insignis* is very common, and there are large specimens of the Tulip tree. *Quercus latifolia* and *Q. latifolia glabra*, fine examples of the evergreen Oaks; a couple of trees of *Q. coccinea* were next observed, afterwards *Pseudotsuga Douglasii*, some planted about thirty-eight years ago, now grand well-proportioned trees. Oaks, Pines, and Cedars, including a tree of the Lucombe Oak. The age of this Oak is said to be 120 years[?], and was originally planted by the head of the firm of Messrs. Veitch & Sons. This grand tree is 14 feet in circumference 3 feet from the ground, and rises with a clear stem 20 feet ere there is a branch. *Thujaopsis dolabrata* I have specially marked as a most perfect tree, dense and compact, of a splendid dark, shining green. This grand pyramid is from 35 to 40 feet high, its lower branches right down to the green sward. There are Bamboos in fine clumps, with many masses of *Dracæna indivisa* that had been cut down with frost some three years ago last March, and now are fine masses of six or eight plants, 6 feet or more in height. Choice hybrid *Rhododendrons* have been planted in a long Laurel border, and are now well established; the Laurels are constantly reduced in bulk by the saw and axe, and shortly the *Rhododendrons* will be given the space to themselves. *Thujaopsis borealis*, 45 feet, is in perfect health; so, too, are *Cupressus macrocarpa*, 60 feet. Other choice species are *Desfontania spinosa*, *Retinospora ericoides*, glorious masses, some 8 feet high, of a deep purple sheen; *Rhus Cotinus*, very large; the Sikkim *Rhododendron cinnabarinum* or *Blandfordiana*; *Cupressus torulosa*, and *C. Goveniana*; the *Berberis asiatica*, and *B. vulgaris*; *Euonymus sanguineus*, with its scarlet capsules and orange-coloured seeds; a magnificent *Araucaria imbricata*, whose trunk at 3 feet from the ground measures 7 feet 6 inches. The *Cedrus Deodara* glen includes a splendid tree planted some sixty years back, now rising to a great height. The Beech avenue also is interesting, the trees having clean stems and fine heads. The Beech is one of the finest trees that can possibly be used in a landscape.

The flower-garden was still gay when my visit was made. In a herbaceous border I noticed a row of the *Salvia patens* and *Calceolaria amplexicaulis*, and the blending of the two colours was most pleasing. An old-fashioned conservatory contains large *Camellias* planted out in the border.

In the fruit department, Mr. Garland has gained many prizes during the years he has been at Killerton. The hardy fruit this season was abundant, and excellent in quality. In the orchard are Apple-trees some fifty and sixty years old, but they were mostly sorts fit only for cider-making, until Mr. Garland grafted them with the best varieties obtainable, and as any

new and good sort now comes to the front, a tree will be grafted with it. They soon make fine heads, and give plenty of fruit. In one season 1300 grafts were inserted, the branches having four, six, or eight crown-grafts put in. These have grown with splendid vigour, and grand branches have been formed, which have brought fruit of large size.

From the orchard to the kitchen-garden is but a step, and here were wall trees, espaliers, bushes, and cordons, on which choice fruit was still hanging. The Pear-trees on walls were three-stemmed cordons 10 to 12 feet high, as well as horizontal trained trees. Many Apples were grown as two-stem cordons and espaliers on wires, and the fruit on these were intense in colour and large in size. On a vinery-border were some of the finest Zinnias I have seen this year. The wall at the end of this border was most beau-

border in front of the gardener's house were fine clumps of *Dracæna indivisa* and *Pelargoniums*, that stand out all the winter. In some seasons they are cut down a little, but in others they pass uninjured.

It was a pleasure to meet so practical a *confrère* as Mr. Garland, and to know that he has now served three baronets.

ANTHURIUM CRYSTALLINUM VAR. ILLUSTRE.

FEW finer stove foliage-plants of dwarf habit exist than *Anthurium crystallinum*; and with the exception of *Phrynium variegatum*, still fewer that are less injured by a short sojourn in the rather inimical conditions of a dwelling-room. Unlike *A. Andreanum*, *A. Scherzerianum*, *A. Lindenianum* and

I sent a man specially to fetch it, not at that time knowing the size of the plant. The journey to and from Bohemia occupied from November 23 to December 3, and you may guess my surprise when I saw the tiny specimen."

THE PAST LILY SEASON IN SCOTLAND.

THE season of Lilies, in my own garden at least, is only just past, for I have had to a late date, *L. speciosum* Kraetzeri and a late-flowering *L. longiflorum* Harrisii in bloom. The weather in summer and autumn in Scotland was pre-eminently favourable to the Lily. From the first of the *L. davuricum*, which appeared in the end of June, till the last of the beautiful and fragrant *L. speciosum*, there was one long, uninterrupted period of bloom. *Lilium candidum*, indeed, was not so strong in growth, nor so floriferous as usual this year; this may have been largely attributable to the fact that, during the previous winter, I had taken the liberty (with Nature) of thinning out the somewhat too crowded bulbs, which, I have always read, is a process of subtraction, which this almost too conservative Lily, which seems to delight in having a numerous family closely crowded together, strongly resents. However this may be, *Lilium candidum* certainly did not grow during last summer to its normal height and strength; its flowers, therefore, so remarkable for their fragrance and purity, did not produce the same impression as in former years. Next season I will look for more commanding growth, when the recently-transplanted bulbs are in perfect correspondence with their environment.

My other Lilies, however, were a greater success. I have never seen the various forms of *Lilium longiflorum* grander than they have been this year. Of these by far the strongest growing and most enduring is the variety entitled *L. longiflorum giganteum*, imported in large quantities into this country from Japan. Home-grown bulbs, if obtained from trustworthy sources, seldom fail. There are several forms of this fine Lily, of comparatively recent introduction, which, however, I do not find by any means so valuable for garden culture as either *L. l. Harrisii* or *L. l. giganteum*. *L. longiflorum Wilsoni* is a notable variety, and produces large flowers. *L. Takesima grandiflorum* is more sparing of its blooms; but they are of great substance, and the foliage of this variety has the merit of distinctiveness. The bulbs of *L. longiflorum formosanum* are very small compared with others, and like those of a widely different Lily—*L. Krameri*—very liable to decay. There is also another and somewhat stronger new variety—not very prolific from a floral point of view—which Dr. Wallace calls *L. longiflorum foliis albo-marginatis*, with variegated leaves. All of the longiflorums are highly ornamental; but *L. giganteum*, *L. Harrisii*, and *L. Wilsoni* are by far the most valuable.

The members of the great Martagon section have this special characteristic, which should not be forgotten by the impatient cultivator—that they take a long time to establish themselves. *Lilium Humboldti* has of late been greatly written down by writers who have found it, manifestly, very difficult of cultivation; such is very far from being my experience, for it grows stronger and blooms more effectively with me year by year. I have, on the other hand, experienced considerable difficulty with *Lilium pardalinum*, which evidently has not found the peculiar soil its nature demands. But this also is a variety which requires a long period for its adequate establishment; in this respect it is even more exacting than its great Californian rival, *Lilium Humboldti*; such at least is the result of my personal experience. *Lilium Szovitzianum*, one of the stateliest and noblest of the Martagons, is, during its flowering season—the beginning of July—one of the grandest ornaments of my garden. I cannot say that I have hitherto been very successful with Martagon album, but *Lilium dalmaticum* and *Lilium chalcedonicum*, better known to ordinary cultivators as the "Scarlet Martagon," grow and blossom luxuriantly



FIG. 119.—ANTHURIUM CRYSTALLINUM VAR. ILLUSTRE.

tiful, being densely covered with *Thunbergias aurantiaca*, *alba*, and *alata*, full of their charming flowers, whilst rambling near by was a clump of *Convolvulus mauritanicus*, almost hidden beneath its pale purple flowers; Tea Roses still carrying fine blooms, and masses of *Portulacacas* blooming very freely, also *Daphne indica rubra* in the best of health.

The four vineries looked well. Begonias, zonal Pelargoniums, stove plants, Ferns, &c., were noticed in the glass structures. The Peach-trees on the walls had borne well, all fruit was gathered, the trees were still full of healthy foliage. A field of two acres has grown Potatoes regularly for twenty years, and has never been dressed during that period with stable-manure. The soil is a rich red loam, on red sandstone, and the garden litter, leaves, trimmings, &c., are used on this plot. Good crops are always obtained, the drills are made 3 feet apart, and a row of Turnips had been sown between the rows. In a

others, with handsome spathes and spadices, the chief beauty of this plant lies in its leaf colouring, which in the type is velvety-green, with crystal-white veins. This variegation is not very constant, but it disappears more or less as the leaves age.

A plant of the variety *A. c. illustre* (fig. 119) was shown at the Drill Hall by Mr. R. Gulzow, Melbourne Nurseries, Bexley Heath, on October 25 last. The leaf colouring, as compared with that of a plant of the type species standing alongside, was decidedly superior, but it remains to be ascertained if it be more constant than in the species. The exhibitor relates the manner in which he acquired the plant: "*Anthurium crystallinum* var. *illustre* I purchased from a private garden in Bohemia in Nov., 1893 and it appears that it originated in a similar way to *Dracæna Lindenii*. The plant, at the time of purchase, was in a small 60-pot, with a portion of one leaf only, and not expected to live, on which account

here, the former often reaching an abnormal height. It is evident from his sacred Epic, *The Light of the World*, that Sir Edwin Arnold regards *Lilium chalcidonicum* as a native of Palestine, but there is only one Lily, as Mr. Baker has informed me, that belongs to this region, viz., *Lilium candidum*, which "grows very sparsely among the mountains of Lebanon."

Lilium Browni and *Lilium Kramerii* did not achieve much, so far as I can learn, in Scotland this year, they did not grow with their customary facility, and their flowers were, consequently, comparatively few. At Logan Gardens, in this parish, the most effective Lilies were *L. excelsum*, and *L. giganteum*; of which the latter was especially fine. Many of the grandest specimens of *L. auratum*—with one or two notable exceptions—were destroyed, or at least greatly mutilated at Logan by the high winds which prevailed during the flowering season; here, where they found more shelter, I was more fortunate, and the plants flowered in most instances splendidly. Mr. McDonall of Logan, had, however, two plants of *L. auratum* adequately protected, which proved veritable giants; reaching a stature of nearly 9 feet, and producing a great number of magnificent blooms.

But I think the most valuable of all Lilies this season has been *L. speciosum*, and especially the exquisite variety entitled *s. Kraetzeri*, whose snowy-white flowers, with their shining green bands radiating from the centre, produce invariably memorable effects. Very beautiful also are *speciosum rubrum*, *s. roseum*, and *s. Melpomene*. *David R. Williamson, Wigtonshire.*

FORESTRY.

THE ECONOMIC MANAGEMENT OF FORESTS.

I WAS much interested in reading in the columns of the *Gardeners' Chronicle* an article on forestry, entitled "Our Woods and Forests," in which the author attacks the management of our State forests, and in particular that of the Forest of Dean.

I should like to say a few words in defence of the management of this forest. The author alludes to a working plan which has been prepared for the Forest of Dean, but I think the following passage shows that he does not understand the object of it. The passage I refer to is: "Proper management is impossible until some definite plan of operations is formulated by the authorities, and adhered to throughout a lengthened period of time." Now the principal object of a working plan, after collecting all data about the forest, and after a consideration of all influences that affect it, is to lay down a definite plan for the forest which must be absolutely adhered to, and cannot be altered with every change of the staff. Now the policy laid down in this particular working plan for the Forest of Dean, is to work the forest so as to obtain the best financial results, and in fact to turn the forest into a large "timber-farm."

It is urged that no provision is made to improve the æsthetic education of the public. It is well known that Government departments are always careful in matters of £ s. d. But because a forest is managed on economic principles, it does not follow that such a forest should be unpicturesque.

The forests on the alpes of the Alps, and on the banks of the Rhine, are managed entirely on economic considerations, and yet they considerably enhance the beauty of the scenery. Personally, I consider that the scenery on the banks of the Wye near Symond's Yat is beautiful as it is, but if it is thought that the coppice is unpicturesque, it may be interesting to learn that, in accordance with the provisions of the working plan, it is intended (solely on account of economic considerations) to gradually convert the coppice into a two-storied high forest with an overwood of Oak and Larch, and an underwood of Beech and Spruce.

But I think that the management of the Forest of Dean on sound economic principles (which I think we may infer will be the case, from the fact that an elaborate working plan has been prepared with that object in view) will accomplish a far higher object than mere pecuniary results, namely, it will furnish a standard which landowners intending to form forests can imitate with advantage.

On visiting the Continent, one is naturally struck by the immense area covered by forests, and one may have wondered why this is not the case in England. But I think this may be explained by the fact that there is a general impression in England that forestry does not pay. That this impression is correct with the present methods of management, I can well believe; but that forests may be made to pay, can, I think, be proved by the fact that continental forest owners find it well worth while to export timber to England in order to obtain relatively high prices.

On the Continent, where economic forestry is thoroughly understood, working plans are drawn up for each forest, with a view to obtaining—firstly, the best financial results; secondly, equal annual returns, and moreover the officer in charge of the forest is generally a man who has had a thorough training in a State forest-school, and can consequently carry out the provisions of a working plan intelligently. Under similar circumstances, forestry could be made to pay in England, the more so as climatic and other influences are more favourable to tree-growth, and as the prices of timber are higher.

If the authorities of the Forest Department in England benefit by the knowledge and experience of the continental and Indian foresters, and so direct the management of the Forest of Dean, so that it shall be a pattern of a financially successful forest which private owners may copy, I think they will accomplish a higher object than the mere improvement of the æsthetic education of a few tourists to Symond's Yat. *H. C. Walker.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Forcing of Potatoes.—A sufficient number of sets of Royal or of Myatt's Ashleaf, or Sutton's A 1 should be selected from the more forward of the stocks and be placed on end, eyes uppermost, in shallow boxes, or on the floor or border of an early vinery. Any light kind of soil may be used to fill in with round the tubers. When sprouted an inch, rub off all but two, or, at the most, three strong sprouts. In the meantime, the forcing-pit or frame should be prepared, filling it with new tree-leaves and stable-litter, two-thirds of the former; and when the heat has risen, make it firm and level, and cover with about 10 inches of light rich soil, and on this getting warm throughout, plant the sets at 10 inches apart in the rows, the latter being 12 inches asunder. There is no necessity to plant wider than this, the moulding-up being done by covering the whole surface with warm soil when the proper time comes. The top-heat at the beginning should not exceed 45° at night or 65° by day; the bottom-heat of the hot-bed should be kept steady at 75° to 80°; and if it be inclined to increase, as is nearly always the case in very mild weather, holes must be made here and there in the mass by means of a sharp stake, in order to let it escape, affording air in small quantity, to allow of the escape of the heat and steam.

Rhubarb.—A sufficient number of Rhubarb roots to last for some weeks should be placed at about this date in a cool shed, in readiness to be put in the forcing-house as may be required to meet the demands of the cook, a few of them at a time being placed in heat. Rhubarb in full growth in the forcing-house will require plenty of water.

Radishes.—Continue to prepare hot-beds for Radishes, covering them with a layer of rich light soil 8 inches in depth. When the temperature of the frame is steady at 60°, sow seeds of any of the approved varieties, either long, oblong, or round-rooted.

Endive.—Some plants which are almost fully grown may be introduced to a warm frame or pit, in order to blanch them. Plenty of air should be afforded Endive growing in cold frames and pits.

Seakale.—In order to ensure a stock of roots, when hard frosts seal the ground, a good number should be lifted and stored under cover for forcing as may be required. When the roots are forced in the open where they grow, the groups of plants should be covered first with fine coal-ashes. A certain number of these may be forced by packing fermenting stable-dung and leaves about and above the pots, making this fairly firm. The chief danger is overheating. In order to avert any risk from this cause, test stakes should be stuck into the materials here and there, and when these, on being withdrawn,

indicate a greater degree of warmth than is desirable, some of the materials must be removed for a time.

Onions.—If Onions are required in the young state, seeds may be sown in a gentle heat, either on a bed of soil or in boxes.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

The Peach.—Brown scale often infest these trees, and the present affords a suitable time to get rid of it. After cutting away superfluous branches, loosen the branches from the wall, tying them loosely in bundles. Remove the insects with a thin piece of wood, and thoroughly scrub the old wood with a solution of soft soap, or Gishurst Compound-soap, mixed at the rate of 4 oz. or rather less to the gallon of soft water. The wood of the current year must not be touched with a brush, because the buds are easily damaged, but wiped with a sponge after loosening the scale with a strip of wood. Scale on the young wood is usually young, small, and pale in colour, requiring a close search to find it. After the shoots are sponged, or scrubbed, the tree should have a syringing with clean water at a temperature not higher than 140° in order to detach the eggs and young fry; after giving another search for any that may have escaped removal, the trees will be ready for fastening to the wall again to prevent injury from frost, this being especially necessary if the wood is imperfectly ripened, as it often is in cold districts. Peach-wood that is hard and brown in colour is better able to withstand severe cold, and is loosened from the walls by some gardeners, and secured at a distance from it during the winter, with the object of retarding the flowering period in the spring; but I do not advise this course, there being always a danger that the pith will be injured by frost, although the rind may show no sign of it. This freezing of the pith is a cause of weakness, and leads to the decay of the branch—it may be years afterwards. I prefer to protect the trees thoroughly when they are in flower in the spring. In cold districts glass copings which have been removed for the benefit of the trees during autumn rains, may now be fixed up, in order to keep the trees dry, and better prepared against severe frosts.

The Fruit-room.—The fruit in store should be examined once every week, and decaying fruits removed without disturbing those that are sound, handling or rolling the fruit on the shelves after they are ripe causing decay to be set up. Where fruit is placed in one layer, examination without moving them is easy; and where there are several layers, the upper ones should be removed carefully, and placed elsewhere, and then the bottom layer can be readily examined. The sweating of the fruit will now have entirely ceased, and the amount of ventilation afforded whilst this was going on will not now be needed or desirable, as the admission of air will now cause the rind to shrivel. The temperature of a fruit-room ought not to go below 35°, and fruit is kept in better condition if a steady temperature of 40° can be maintained. The use of fire-heat should be avoided as far as may be; much good may be done in severe weather by defending the doors and windows with thatched hurdles or the like, and covering the fruit with sheets of paper. When a thaw follows a period of frost, the outside air should not be admitted in greater volume than can be helped, as being higher in temperature, it settles on everything in the fruit-room, and thus tends to set up decay. At such times it may be advisable to use the warming apparatus to raise the warmth of the room. Pears may be hastened and even improved in flavour and texture by placing them, a few at a time, in a warm cupboard having a temperature not higher than 55°, but they must be kept in it only till they are fit for eating, or the flesh will become mealy.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Chrysanthemums.—Some shoots fit for making cuttings will now be obtainable from most of the varieties. Having stripped off the lower leaves for an inch or thereabout, cut the shoot squarely across below a joint, and without delay insert them in pots of light sandy soil. Those intended to form single-flowered plants should be put singly into small pots. Where numerous bushes are grown, boxes may be used for striking. If the rust has been present, the cuttings should be dipped in a weak solution of sulphide of potassium, made with an ounce of it to one gallon of water; even if no rust was present, it will be advisable to dip the cuttings. If sulphide of

potassium be not used, Quassia, or XL-All will suffice, and a dipping will free them from green-fly for some considerable time. A pit or frame where heat is at command to exclude frost when necessary will be found suitable for propagating purposes. Should sufficient cuttings be inserted as to fill the space at command, well and good; if not, the cutting-pots may be plunged in large boxes filled with cocoa-nut fibre refuse, covering them with sheets of glass. Having inserted the cuttings, afford water, and during periods of sunshine let the cuttings be shaded, so that there is no flagging of the leaves. A temperature of 45° at night should be maintained, and the boxes or frames kept close till rooting becomes evident, then admit air, and increase the amount by degrees. The glass coverings should be wiped dry daily. Chrysanthemums which make little if any growth from the root-stock at this date, should have the root-mass reduced, and be potted in smaller pots, and afforded a temperature of 48° to 50°. Such varieties will produce useful shoots in a short period of time.

Primula obconica.—This plant should be afforded a temperature of 50° at night and 60° by day, as if grown cooler the foliage is apt to become of a sickly yellow colour, and the flowers unsatisfactory.

Lilium candidum.—Those bulbs which were potted early will soon be pushing up their stems, needing a temperature of 45° to 50° at night, with which the growth will not be hastened unduly; anything higher than these figures inevitably spoiling the plants, as would also lack of ventilation. If green-fly infest the new growth, the house should be occasionally fumigated.

Cyclamens.—These plants will now be showing bloom, and requiring the occasional aid of mild manure-water, varied with clear soot-water. Any seedlings that have grown large enough to be readily handled, may be pricked off into pans filled with a compost consisting of fibrous loam, leaf-mould, and silver-sand, in equal proportions, ample drainage being afforded. A shelf near the glass in an intermediate-house affords suitable accommodation for the pricked-off seedlings during the winter.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford, Kent.

Walks.—The present affords in most establishments a favourable season for undertaking the formation of new walks and roads, or the repair of such as exist. In regard to old ones that have got of various widths, it is the proper method to run a line of pegs down the centre as far as it may be adjudged, and having got these fixed to your liking, measure out the path anew from these, inserting wooden pegs on either side to mark the distance to which the turf must be brought. The same method must be adopted when making new ones, with the additional proceeding of taking the dead or hanging level of the road or walk along the middle line of pegs, which will mark the apex or top of the curve of the surface; this should decide the height of the turf-margin or box-edging, as the case may be. This line of pegs affords a ready means of measuring the depth of the excavation for the road materials. The depth will vary from 1½ foot in the case of a road that will be much used, to ½ foot for narrow walks. On each side of the excavated line of road or walk, a V-shaped drain, 9 inches deep, should be cut, and drain-pipes, or macadam, laid along it, so as to carry off water falling on the surface, the drains being laid on the slope, and conducted to an open drain or dry well; and along this line catch-pits, 9 inches to 1 foot square, should be built and fitted with gratings. Where the soil is gravelly or rocky, or chalk approaches the surface within 2 feet, such drains are scarcely called for, the percolation of the water to lower depths being certain and rapid. It may be said here that chalk forms a good lasting foundation for a walk, if it be placed 9 inches under the surface, and frost be not allowed to act upon it before it is covered. The filling-in of the excavated walk may be carried out with any available hard materials up to within 6 inches of the actual level of the surface, and receive a coating of granite, flint, whinstone, or other kind of macadam 3 inches in thickness, and finally a coating of coarse gravel, 2 inches; and one of fine gravel, 1 inch thick. The whole of the coarse materials should be compacted with rammers as each layer is put in, and finally the gravel surfacing should be well rolled. That with which walks and roads are covered differs greatly; in some parts binding gravel is the substance solely employed; in others, hogget, that is, gravel about the size of horse-beans, which makes a clean walk in any weather, being always

dry, but it is a dangerous sort of material in the vicinity of grass that is mown with machines. A similar kind of gravel is made from granite and whinstone, but a walk or road made of this kind of material is firmer under foot, and more pleasant to walk upon; at the same time its colour, blue-black when wet, and grey when dry, is not much liked, at least in the grounds round the dwelling, and it does not, in either condition, contrast well with turf. For forming a walk where such is not desirable, its inconspicuous colour, when seen at some distance, is a point in its favour. In many seaside gardens shell-gravel or coarse sand are employed, none of which forms a binding walk, but it presents a loose surface, and the top coating should never be more than half-an-inch deep, and when dirty it should be carted away, and fresh laid down, for when once it has got in that condition, it becomes a most prolific weed-bed that no amount of hoeing and raking can keep them clean for more than a fortnight. Stoncrop is a great pest on such walks.

Lobelia cardinalis.—Any of the plants left in the beds should now be lifted, and placed in a cold-pit for the winter, some of the plants being potted if a large stock is required. These may be placed in an intermediate-house, and propagation may go on during the winter by taking off the shoots with a bit of the root attached.

General Remarks.—While open weather lasts, planting should be pushed on, as most of this kind of work will be stopped on frosts occurring. The same remarks apply to turfing and the renovation of lawns and grass-verges. See that no newly-planted tree or shrub suffers from wind-waving, but afford to each one or three stakes, and big trees three guying-wires, fixing these to large stumps driven deeply into the ground. Make creepers on walls secure against wind and snow, and afford the roots a mulching of rotten manure. The cuttings of Calceolarias recently inserted, and of bedding Pelargoniums, should be carefully afforded water, and have all dead leaves removed from them at frequent intervals.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorset.

Affording Water in Winter.—There are few details in Orchid cultivation during winter that require more care than that of affording water to the plants. The tendency is to give too much, and to maintain the atmosphere too moist. More plants have been killed by excessive watering than from all other causes combined. I would therefore advise inexperienced cultivators, whenever they feel doubt upon the matter, to keep the plant on the dry side rather than on the wet, especially in conjunction with a low temperature, or if the plants are in large pots.

In the East Indian-house many of the Aërides, Saccolabiums, Angreæums, Rhynchostylis, Stauroopsis, Renanthera, Sarcophilus, Sarcanthus, Thrixspermum, and the warm-growing Vandas, are now through their growing season, and although such plants are never absolutely at rest, they require to be treated, in a measure, as resting plants, and the longer they can be kept in a state of semi-inactivity, the more vigorous and floriferous will be the new growths. These species should never be permitted to become quite dry at the roots, but the sphagnum-moss should become of a whitish-green colour before a fresh supply of water is given. When affording water, do not saturate the moss, but merely sprinkle the surface, so as to keep it alive. Epiphytal Orchids, as Phalaenopsis Schilleriana, P. Aphrodite, P. amabilis, P. intermedia, and others that are developing their flower-spikes, should be given similar treatment. It is not a safe practice to dip the baskets into water at this season, because the compost then remains wet for a very long time. Neither should the foliage be unnecessarily wetted, and especially must the centre of the plant be kept free from water. The deciduous variety of Phalaenopsis Lowii now in flower, after its leaves have fallen, may be kept somewhat drier than other species. Such evergreen Orchids as Phaius, Cyrtopodiums, Eulophiella, Anæctochilus, Bollea, Pescatorea, &c., require less rest than any other Orchids, but when they have flowered they should be sparingly watered for a few weeks. The deciduous Calanthes, when their flower-spikes have been removed, should be kept quite dry at the root until the season for repotting them arrives.

Species that require Extreme Treatment.—The deciduous Catasetums, Cycnoches, Mormodes, Cyrtopodiums, and Chysis, appear to require a rather

different atmosphere to most other Orchids, in order to thoroughly mature the pseudo-bulbs. A small glass-lobby, facing south, is just the place for them when growth is completed. Suspend them to the roof with the foliage nearly touching the glass, and afford them plenty of water until the leaves fall away. Maintain a dry atmosphere, and temperature of 60°, without sun-heat. The bulbs will then finish up plump and hard, and if well ripened in this way, the plants will require no water throughout the long resting period. In the East Indian-house the leaves would not fall away nearly so quickly, which is a decided disadvantage.

Dendrobiums, especially the deciduous kinds require a long resting season, and they should be exposed to as much sunlight as possible. They need no water unless the pseudo-bulbs show signs of shrivelling, in which case a small quantity may be given from time to time, to keep them in a healthy condition. The evergreen section, as D. thyrsiflorum, D. densiflorum, D. Griffithianum, D. Farmeri, D. Schroderæ, D. chrysotoxum, D. suavisimum, the nigro-hirsute species, D. Lowii, D. eburneum, D. formosum, D. cruentum, D. cariniferum, &c., and the cooler-growing varieties, D. infundibulum, D. Jamesianum, and D. Wattianum, should be kept slightly moist at the root when at rest. The new D. spectabile, D. Johnsoniæ, and D. D'Albertsii, need also to be kept warm and moist; as if the plants are allowed to become very dry at the roots, the leaves invariably "spot." D. Phalaenopsis, D. stratiotes, D. taurinum, D. bigibbum, and others of that section, require but little water while at rest, but they prefer to be in a warm, sunny position.

Lælias and Cattleyas never all rest together; therefore they should be treated accordingly, the object being to afford just sufficient water to keep the pseudo-bulbs and leaves from shrivelling too much. Lælia anceps and its numerous varieties should be kept rather dry after flowering, so as to induce the plants to take a short rest, and afterwards to make many roots.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Pot-Vines.—Forcing having in some instances commenced some six weeks ago, the canes will have burst into bud from bottom to top, rendering it at once necessary to secure them to the trellis. The temperature at this stage should range at 55° at night, 60° in the daytime with fire-heat, and 10° more during periods of sunshine. The syringing of the Vines should be performed once on fine days, and that in the morning; genial growing conditions being caused by moistening the floors, walls, &c. Ventilation may be afforded in small amount at the highest part of the structure whenever the outer air is mild enough to safely allow it.

The Grape-room.—Whenever there are several vineries, and grapes have to be kept to a late date, a cool, dry, frost-proof room, or one provided with a stove for keeping out frost and drying the air occasionally, should be constructed; and if it have no connection with the outer walls, so much the better, as its temperature will then be unvarying. Where this cannot be obtained, there should be a matchboard lining to the walls, with considerable air-space between. The ceiling should be provided with a large ventilator in the centre, and another in the wall, also a window with movable sashes, and shutters to exclude the light. The bunches being cut with 6 to 8 inches of the shoot, are stuck into champagne or other wine-bottles, three-quarters filled with water, into which some powdered charcoal is dropped. The bottles should lean slantingly against a rail, so that the Grapes may hang away some distance from the sides of the bottles. The racks for holding these bottles should range in tiers one above the other, and be so constructed as to be readily examined. The best time for pruning late Vines is early in January, and the Grape-room should be put in readiness shortly for receiving the stock of bunches.

Materials for Making Vine-border, Surfacing, &c.—The season's requirements in the matter of soil should now be calculated, and if the stock on hand is unequal to the probable requirements of the garden, advantage should be taken of open weather to cart in what is required. A stock of old plaster and mortar, and brickbats, should be obtained from the builders. Charred soil from the garden smoulder-heap, and wood-ashes made from green young brushwood, trimmings of bushes, &c., will likewise find employment in making new fruit borders.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DEC. 13. { Royal Horticultural Society's Committee.
Eastbourne Horticultural Society, Meeting.

SALES.

WEDNESDAY, DEC. 14. { Continental Plants, Roses, Libres, &c., at Protheroe & Morris' Rooms.
Unreserved Clearance Sale of Orchids, Plants, Furniture, and Effects, at Beddington Villa, Bandon Hill, Croydon, re J. Seeger, dec., by Protheroe & Morris.

FRIDAY, DEC. 16. { Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—40° 6'.

ACTUAL TEMPERATURES:—

LONDON.—December 7 (6 P.M.): Max., 53°; Min., 44°.

PROVINCES.—December 7 (6 P.M.): Max., 50°; Scilly; Min., 38°; Stornoway.

Heavy rain; dull; mild.

The Action of Manures.

SOMEWHAT to our surprise no one has ventured hitherto to contest the accuracy of a statement made by Mr. HALL at the outset of his very instructive lecture at the Royal Horticultural Society on the 22nd ult. The lecturer began by drawing comparisons between the farmer and the gardener, by no means to the advantage of the latter. Doubtless, from the lecturer's point of view, he had a certain amount of justification. If, however, it is to be taken as a general statement, we must emphatically protest against its correctness. Take the average head-gardener and the average yeoman or tenant-farmer, and then ask which is the better cultivator? There can be but one answer to such a question. The gardener is far ahead of the farmer. The gardener is less affected by the influence of seasons and of climatal variations because he has better means of rendering himself independent of them. Indeed, the gardener enjoys many advantages of which the farmer, from the necessities of the case, cannot avail himself, and thus it happens that the gardener gets not only greater variety of produce, but that produce is relatively of greater value and much greater in amount. Who can estimate how much more the gardener gets out of the land than the farmer?

Farmers and gardeners alike indulge in much quackery in the employment of manures, of whose nature they know little, and of whose mode of action scarcely if any more. They are

as credulous as the purchasers of quack medicines, of Lentil flour, or other substances palmed off under fanciful names at exorbitant prices. Of course, this remark does not apply either to all farmers or to all gardeners; but, still, the general statement is unfortunately too true.

As to the action of manures, both classes of cultivators are apt to lay disproportionate stress upon it. Compared to water, air, and the action of light and heat, the influence of manures is relatively small. Weight for weight, the plant derives infinitely more from the sources just mentioned than it does from the soil. Of course, no one will doubt the importance of the constituents of the soil, and we have not the slightest intention of belittling their influence. What we wish to do is, to caution the cultivator against indiscriminate reliance upon chemical analysis, either of the soil or of the plant. The analysis of a particular sample of soil only shows the constitution of that soil at a particular moment, and when subjected to tests or conditions which do not occur in Nature. The soil is not the inert substance it was once supposed to be; it teems with living organisms, which profoundly modify its relations to the plant. Water, heat, light, air, exert powerful influence on the soil and its contents, just as they do on the leaves. The leaves are often compared to a laboratory, in which endless changes and combinations take place under more or less known conditions. It is the same with the soil. A chemical analysis of its components must therefore be taken only as affording indications or as means towards the successful cultivation of the plant, but not as affording specific information in particular cases.

The analysis of the plant, especially of the ashes left after burning, is equally or more incomplete. The ashes show a part, and only a fractional part, of the volume of nutriment that is taken from the soil. Again, the analysis necessarily only shows the constitution of the plant, or of the part of the plant at the particular time the analysis is made. But a plant during its growth varies greatly in constitution at different times, and in different parts of its structure. Analysis affords comparatively little information of the ceaseless interaction and combination of components which is going on in the living organism. How little, for instance, up to the present has it taught us of the action of "enzymes," or ferments, which play so large a part in the life-history of the plant. Until a great deal more is known on these and cognate matters, the use and application of manures must remain chiefly empirical.

There is, however, one way from which the cultivator may obtain much experience that will be of the greatest service to him. We allude to field or garden-experiments, on the importance of which Mr. HALL very properly insisted. The experiments carried out for so many years at Rothamsted by Sir JOHN LAWES and Sir HENRY GILBERT furnish object-lessons, the value of which is beyond all estimate. Experiments on the same general plan, modified according to circumstances, should be carried out on every farm and in every garden in the country. Were this done over a series of years, cultivators would soon put themselves in possession of facts the due consideration of which would prevent the wasteful, haphazard, and irrational use of manures, natural and artificial, which prevails at the present time, alike in the farm and in the garden.

** OUR ALMANAC.—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the Year 1899. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for the coming year.

CHAMÆROPS EXCELSA.—In our present issue we give, as a Supplement, a representation of a fine specimen of this Palm in the garden of Dr. HAMILTON RAMSAY, of Torquay. In our number for Nov. 26, we gave an account, with an illustration, of this remarkable garden, of which the Palm above cited is a remarkable feature. The photograph from which our illustration was taken was one of those executed by Mr. F. KITTO, of Torquay, for presentation to the Princess of WALES.

ROYAL HORTICULTURAL SOCIETY.—The last meeting this year of the Royal Horticultural Society will take place next Tuesday, the 13th inst., in the Drill Hall, James Street, Westminster, when the Fruit, Floral, and Orchid Committees will meet as usual at 12 o'clock, and the Scientific Committee at 4 P.M. A lecture on "Some of the Plants Exhibited" will be given at 3 o'clock by the Rev. Prof. GEO. HENSLOW, M.A., V.M.H.

LINNEAN SOCIETY.—On the occasion of the evening meeting on Thursday, December 15, 1898, at 8 P.M., the following papers will be read:—1. "Sketch of the Zoology and Botany of the Altai Mountains," by Mr. H. J. ELWES, F.R.S., F.L.S., &c.; 2. "A Description of some Marine and Freshwater Crustacea from Franz Josef Land, collected by W. L. BRUCE of the Jackson-Harmsworth Expedition," by Mr. THOS. SCOTT, F.L.S., &c.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held on Monday, December 12, 1898, when a paper will be read by Mr. WM. WEAVER (Fellow), entitled "The London Building Act and the Official Supervision of Buildings." The chair will be taken at 8 o'clock.

"BOTANICAL MAGAZINE."—The December number of this venerable publication contains coloured figures of the following plants:—

Musa Bakeri, Hook. f., t. 7627.—A newly-introduced plant, supposed to be a native of Cochin China. It has the habit of *M. sapientum*, but has a shorter spike, and the bracts are of a deep rose-pink colour. Kew.

Cardamine latifolia, Vahl, t. 7628.—A Pyrenean species, greatly resembling our common Lady's Smock, *C. pratensis*, but larger in all its parts. Kew.

Parhipedilum Mastersianum, Hook. f., t. 7629.—This is better known under the name *Cypripedium*, and for garden purposes it may still be retained under that genus. It is, says Sir JOSEPH HOOKER, "a noble species, named in compliment to Dr. MASTERS, F.R.S., through whose exertions, following those of his predece or, Dr. LINDLEY, the *Gardeners' Chronicle* has done more to extend a knowledge of the Orchidæ than any other periodical."

Caladenia carnea, R. Brown, t. 7630.—An Australian terrestrial species, with a linear, hairy leaf, and erect spikes from each tuber. The sepals and petals are linear, white, or in some varieties rose-coloured; lip much shorter, concave, arcuate, with a row of tubercles on either side of the centre. Kew.

Fritillaria pluriflora, Torrey, t. 7631.—A Californian species, differing from the ordinary species in the very short tubular portion of the perianth, and in the spreading stellate limb. The sepals and petals are rose-pink in colour, with a purplish pit at the base of each. There is no tessellation on the flower, which is so unlike that of *Fritillarias* in general as to warrant its being placed in a separate genus.

NATIONAL DAHLIA SOCIETY.—The annual meeting of the National Dahlia Society will be held, by kind permission of the Horticultural Club, in their rooms at the Hotel Windsor, Victoria Street, S.W., on Tuesday, December 13, 1898, at 2 P.M.

"KEW BULLETIN."—Appendix 1 (dated 1899), comprises a list of seeds of hardy herbaceous annual



CHAMÆROPS EXCELSA IN DR. HAMILTON RAMSAY'S GARDEN, TORQUAY.



and perennial plants, and of hardy trees and shrubs, which have been collected at Kew in 1898. They are not sold to the public, but are available for exchange with other botanical establishments.

TO ADVERTISERS.—In common with householders generally, we are in the habit of receiving circulars in numbers too large to be worth the trouble of counting. For the most part these documents are immediately consigned to the waste-paper basket, so that all the trouble and expense connected with their transmission is wasted. How very much more sensible it would be to advertise in an appropriate manner in suitable journals—such, for instance, as the *Gardeners' Chronicle*!

ROSA GIGANTEA AT CAPETOWN.—We learn from a correspondent at the Cape that *Rosa gigantea* has flowered this year in the garden of Mr. ARDERNE, Claremont, Capetown. It is a four-year-old plant, which has never been pruned. This is the second recorded instance of the flowering of this grand Burmese Rose under cultivation.

THE LYONS ROSE CONGRESS.—We have already had occasion to note the doings of this Congress, held at Lyons on September 2 last, when Mr. ARTHUR WILLIAM PAUL, of Waltham Cross, attended as a representative of British rosarians, and was, with other foreign Rose-lovers, elected a Vice-President of the Congress. The *Bulletin of the French Society of Rosarians* for October contains a full account of the proceedings.

EXAMINATION IN HORTICULTURE.—The next examination will take place in April, 1899. Medals and certificates will be granted to deserving candidates. Scholarships are offered to male students between the ages of eighteen and twenty-two years. The successful candidates must study in the gardens of the Royal Horticultural Society at Chiswick for one year, and conform to the general rules laid down for the guidance of students. The students who have gained scholarships in former years are Messrs. W. N. SANDS, G. F. TINLEY, and H. S. LANGFORD. Intending candidates should apply for further information to the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster, S.W., enclosing a stamped and directed envelope.

CHRYSANTHEMUMS AT ANTWERP.—At the recent Antwerp Chrysanthemum show, M. HENRI VANDERLINDEN and L. BERKELAERS staged, the former a hundred, the latter eighty plants, of an average height of 2½ feet. M. VANDERLINDEN showed plants grown for more than a year in tubs, as are Oranges; among them were Calvat's Australian Gold, Fée de Champsaur, with fifty blooms; Mme. X. Rey, with eighty flowers; Mme. Gustave Henry, 7 feet across, with eleven flowers. Plants raised from one-year cuttings included L'Isère with eight flowers; Edwin Molyneux, with thirty-two flowers; Mrs. Harman Payne, with thirteen large flowers; Beauté Grenobloise, with twelve fine blooms; M. H. de la Blanchetais, with twenty flowers; Ma Perfection, with ten blooms; W. H. Lincoln, with twenty-two flowers. Among M. BERKELAER'S exhibit were Géant de Bellecour, with seven flowers; Souvenir de Petite Amie, with eleven flowers; Souvenir de Jambon, with twelve large flowers; Fée de Champsaur, with eleven flowers; Souvenir de Molins, with seventeen very fine flowers; M. Edm. Roger, with twelve large flowers; Mme. Rozain, with five flowers; Colonel Trevor Clarke, and Charles Davis, each with fifteen flowers; and W. H. Lincoln.

"SYMBOLÆ ANTILLANÆ."—Under this title, which we may translate as "Contributions to the Flora of the West Indies," Dr. URBAN of Berlin has issued, as a preliminary chapter, a full bibliography of his subject. This occupies nearly 200 pages. It comprises an alphabetical list of all authors who have published books or memoirs on the Botany of the West Indies. At the end of this list an enumeration of the works pertaining to the several islands is given, from which we find that some sixteen memoirs or books are devoted to West Indian Orchids, four to

Conifers, five to Palms, thirty-six to Ferns, and so on. The work may be had from WILLIAMS & NOR-GATE, Henrietta Street, Covent Garden.

USELESS SYNONYMY.—A French Rose-grower states that Rose Mrs. John Laing (pale form) has been sold in England under the name of "Mrs. W. Sanford," and of "Pride of the Walley." Albion may be perfidious more or less, but we venture to think no son of Albion has sent out a Rose as Pride of the Walley!

M. NABONNAND.—Each year the French Rose Society awards a medal to some distinguished rosarian. This year the medal has been bestowed upon M. NABONNAND, of Golfe Joan.

ROSES.—The *Deutsche Gärtner Zeitung* of Erfurt publishes a Rose novelty number (*Rosen-Neuheiten Nummer*), containing figures of H.T. Father Lambert, H.T. Grand Duke Adolf of Luxemburg, H.T. Frau Geheimrath von Boch, H. T. White Maman Cochet, and H. T. Ferdinand Jamin, and H. T. Grüss an Teplitz.

PROFESSOR GIBELLI.—Italian papers announce the sudden death of Professor GIBELLI, of Turin, an enthusiastic Italian botanist, and the author, among other works, of the very useful *Illustrated Flora of Italy*.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION), AND NATIONAL AURICULA AND PRIMULA SOCIETY (SOUTHERN SECTION).—The annual general meeting of the above societies will be held in the room of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Wednesday, December 14, 1898, at 7 P.M. Members of committees are invited to meet at 6.30 P.M. on the same day, and at the same place.

HORTICULTURAL CLUB.—The usual monthly dinner and *conversazione* will take place on Tuesday, December 13, at 6 P.M. The subject for discussion will be "Size in Flowers, Fruit, and Vegetables," to be opened by the Rev. W. WILKS.

THE PREMIER BLOOM at the November show of the National Chrysanthemum Society was one of G. J. Warren, exhibited by Mr. F. VALLIS, Bromham Fruit Co., Bromham, near Chippenham. It was to this gentleman that Mr. SIMPSON'S prize of a painting of the bloom was presented on the occasion of the annual dinner reported in our last issue.

PERSIMMONS (see p. 406).—We are informed that the greater part of the fruit in the market came not from the Canary Islands, but from the south of France. The fruits are known in the markets as "Kaki." For once the popular and the botanical name are in accord, for the fruits are the produce of *Diospyros kaki*, numerous varieties of which are cultivated in Japan, from which country they have been introduced to the warmer parts of Europe. We have often had occasion to mention the fruit, for its beauty and for its delicious flavour when properly "bletted." If one is incautious enough to try the fruit before it is bletted, he will not be disposed to repeat the experiment. The tree is now to be found in many orchard-houses, and as we noted the other day, Canon ELLACOMBE succeeds in fruiting the tree in the open air almost every year.

THE ISLINGTON CATTLE SHOW.—For a period of 100 years the Smithfield Club has held an annual exhibition of cattle and sheep, &c., in London, and for the greater part of this time the *Gardeners' Chronicle* has attended its gatherings. Not that we are specialists in fat beasts, but we cannot profess other than the liveliest interest in agriculture, it being so closely allied to our own particular art that it would be very difficult to divide them by a line. Ours is garden culture, as differentiated from field culture; but as the years pass, it is observed that a greater proportion of the agricultural land in England is being subjected to methods very nearly akin to gardening. This approximate identity of the two arts is very apparent upon an inspection of the Islington show. The various seedsmen have stands

in the galleries that primarily set forth their specialties for the agriculturist; but there are many roots and other vegetables, and even fruits, that are very interesting to the gardener. As gardeners, we cultivate Potatoes, Carrots, Parsnips, Turnips, Onions, Kale, and hardy fruits. The farmer does the same thing, but he grows them under a system of field culture. The farmer, of course, in addition to all this, cultivates the various grains and roots for human consumption and for cattle, and, as the show very vividly demonstrates, he rears "fat beasts." On this occasion Messrs. J. Carter & Co., High Holborn, London, had a very imposing stand, that displayed huge roots of their Mammoth Long Red and Windsor Prizetaker Mangels, Goldfinder Swede, several standard varieties of Onions and Potatoes, and their Hundred Fold, Stand-up, and Prize Red Wheat. In a few boxes also were lawn-grasses, just raised from the firm's seed. The exhibit from Messrs. Sutton & Sons, Reading, was as fine as usual. In the centre was a display of various medals and honours that the firm had won. Their Golden Tankard Mangel, specially recommended for dairy cows; their Prize-winner and Mammoth Mangels, and Magnum Bonum and Crimson King Swedes were represented by large numbers of very large yet even roots. There were also Kohl Rabi, Carrots, and Potatoes, including of the latter such fine varieties as Satisfaction, Magnum Bonum, Windsor Castle, Ninety Fold, Flourball, and the new variety Ideal. Dried specimens of pasture grasses and an assortment of the best varieties of the grain could be noticed also in this exhibit. The Stourbridge firm, Messrs. Webb & Son, was much to the fore, their exhibit being of very noticeable character. Again were noticed mammoth roots of the firm's Mangels, Swedes, and Turnips, the specimens of Yellow Globe Mangels being particularly colossal. There were good samples of Potatoes also in some well-known and prized varieties. Messrs. Harrison & Sons, Leicester, showed lesser-sized roots, selected with much regard to evenness and quality; they had a larger quantity of Potatoes than some of the exhibitors, and the Intermediate and other Carrots were very fine. "Dicksons," Chester, contented themselves with a smaller exhibit, chiefly displaying dried grasses and seeds of same. There were two exhibits from Coggeshall, in Essex, one from Messrs. E. W. King & Co., and the other from Mr. Jno. K. King. The Surrey Seed Co., Redhill, Mr. Alex. Blatchford, Coventry, Messrs. Jarman & Co., Ltd., Chard, Somerset, had also stands containing interesting exhibits. Potatoes were the special features of Messrs. Fidler & Sons, Reading, and Mr. A. Findlay, of Markinch, N.B., both of which firms have introduced to commerce many fine varieties. Mr. B. Wells, Crawley, had a few hardy fruits; and a nice exhibit of Apples was made by Messrs. W. & J. Brown, Peterborough and Stamford, the firm, it will be remembered, which introduced into commerce the remarkable and handsome Peasgood's Nonsuch, and Barnack Beauty. It was this firm, too, that first exhibited Allington Pippin before the R.H.S., when, as South Lincoln Pippin, it was certificated by the Society. Another exhibit of fruits was one from Mr. W. Horne, Cliffe, Rochester, who had several good varieties in fine condition.

The show of implements was extensive, and worthy the inspection of all connected with agricultural, horticultural, or dairy work. It is important to an economical system of cultivation, that use be made of the improved appliances that science and mechanical skill have provided. The Queensland Government had a stand where cheese, very good butter, and grain, &c., grown in and exported from that vigorous colony could be inspected. We were told that the problem the colony has to solve is still that of labour, and the Government has great need of agricultural (skilled) labourers, and gardeners to assist in the development of the resources of this sun-favoured country. A great number of miscellaneous but instructive exhibits we are quite unable to mention here, and we can only in conclusion remark that the prime beast in the show was a magnificent black-polled Angus exhibited by Lord Strathmore, Glamis Castle, N.B., a Scottish seat that has long been famed for the horticulture that is encouraged there.

THE PRINCIPLES AND PRACTICE OF BULB-GROWING.

(Continued from p. 361.)

AFTER flowering, the bulbs should be permitted to remain in the ground until the cycle of their vital activity has drawn to a close, i.e., when the foliage has withered, and no fresh leaves are produced. It would be the greatest error to disturb the bulbs before the leaves had thus gradually decayed, for the latter constitute the manufacturing department of the plant, where, through the sunny days of spring or summer, all the various substances which go to build up the bulb, and the potential energy for its blossoming and leaf-formation the following year, are developed, such as the sugars, proteids, salts, and the chemical matters which yield the exquisite scent and colours of the flower. And all this must continue to its natural close; for if the bulbs were taken up while the leaves are still green, and therefore still active, the latter would be injured and destroyed through lack of the water taken up by the roots, the active assimilation and storage of nutriment would be interrupted, and the flowering capacity of the bulb for next year greatly weakened. The flowers, of course, greatly exhaust the bulb, being produced at great cost to the latter. But in Nature, in the interval between each successive flowering, the leaves are usually long at work, increasing at such time in size and vigour, and building up the bulb again, or the young ones produced therefrom. In most bulbous plants the foliage either accompanies or immediately succeeds the flower. The Meadow Saffron, however, is a conspicuous instance of a plant in which the flowers and leaves appear at two distinct seasons of the year, the former in the autumn, the latter in the spring. This plant was, probably, at one time a spring-bloomer, for vernal flowers, though greenish and weakly, are still occasionally produced, the present habit having been acquired most likely as a result of the too great competition and struggle for life which took place amongst the flowers of the spring. The Dutch growers usually cut off the flowers of their bulbs as soon as they have reached perfection, not allowing them to set seed, or even to show the slightest indication of the ripening of the ovary. In this way a great deal of the energy expended by the plant under a state of nature for the sustenance of the flower and the production of seed, is saved to the bulb under cultivation, with the result that it increases in quality and capacity for throwing up large and well-formed blooms; but after the leaves have died down, care should be had not to leave the bulbs any longer in the ground than is necessary, for in a few weeks they would begin to put forth roots, and form young bulbs for next year, and if they were then to be interrupted in this work by removal from the ground, their flowering capacity and vigour for next year would be lessened.

THE PROPAGATION OF BULBS.

This is a most important and interesting question both for the horticulturist and the botanist; and the history of the mode in which these plants are reproduced, is perhaps the most delightful phase of their delightful and absorbing life-history.

They may be multiplied by seed, but this is for the most part a long and tedious process, and usually only employed in the case of raising hybrids. Too many years elapse before the bulb is mature enough for flowering, and the patience of the cultivator becomes, consequently,

exhausted. The Hyacinth, e.g., demands a youthful immature career of some five or six years before it can feel energy and power, and ripeness enough to throw up a flowering-spike. Some of the smaller bulbs, however, are frequently grown from seed, such as the Snow-drop and Squill, for these do not take so many years to mature their bulbs for flowering. The majority, however, such as Hyacinths, Tulips, Narcissi, Crocus, and Gladiolus, are propagated vegetatively, and that by a method of stem-branching as described in an earlier paragraph of this article. The young bulbs are formed laterally, often in great numbers all round the parent in the axils of the scales of the latter; in the typical bulb. In the Gladiolus and Crocus, when the foliar organs or scales do not constitute the "bulb," the young corm is necessarily produced as a lateral branch in the axil of a scale-leaf at the top of the parent-corm, for in that region is situated the growing point. The young corm then gradually replaces the old one below, which dies.

When the bulbs are taken up in the spring or early summer for housing, the young bulbs are all removed and reserved for planting in separate beds the following autumn, thus freeing the old bulb from the encumbrance of their support, and enabling it when replanted to concentrate its vital energies on its own growth and maturation. *W. C. Worsdell.*

(To be continued.)

MESEMBRYANTHEMUM CULTURE.

THE culture of Mesembryanthemums, or Midday Flowers, Ice-plants, or by what other names they are termed in the vernacular, is undeservedly neglected at the present day; and yet the genus is rich in grotesque forms, and rich and unusual colour of the flower, which in many instances are very freely produced. There is also as great a variety in the forms of the leaves. The cultivation demanded is very simple, and many of the species, being natives of warm temperate climates, such as South Africa, Australia, New Zealand, the Canaries, and countries bordering on the Mediterranean, need only cold greenhouse treatment during half the year, and to be set out-of-doors in a sunny position in the summer and early autumn. Several species make charming window-plants. Propagation may be effected by division, the pieces being laid on a moist sand-bed in the full sun in the spring, rooting taking place in a few weeks.

Mr. Kurt Marquardt, writing in the *Wiener Illustrierte Garten Zeitung* for October, advises the raising of plants from seed. The plants are very prolific of seeds. These seeds should be sown in February in pans filled with sandy soil, and only lightly covered, and the pans set in a warm house till germination has taken place. Instead of leaving the cuttings or divisions to root on the surface of a moist sand-bed, with a bottom-heat of 75°, he places them in an airy place till the wounds are dried, as in the method with Cacti, and then dabbles them out very shallow in pans, and sets these in a luke-warm bed. The cuttings soon form roots, and they are then potted singly, and for the first year cultivated in a mild dung-bed. The cuttings or seedlings, when potted, must be kept close for several days till roots begin to form again; shade from strong sunshine being afforded, afterwards accustoming them to full daylight and full ventilation by degrees.

From October onwards the plants should be accommodated on a greenhouse shelf, close to the glass, and kept quite dry at the root till the middle of the month of February. When growth again begins, the plants should be repotted, always giving small shifts, never large ones, and late in May placed out-of-doors, or, at the most, afforded the protection of a cold frame till June. Mesembryanthemums prefer a sandy, loamy soil and good drainage, consisting of very small crocks overlying a layer of coney crocks

at the bottom of the pan or pot. In summer, water should be frequently afforded. The plants are much benefited by light showers, and on warm sultry evenings by syringing with water. On the other hand, long-continued rain is frequently a cause of stem-rotting, and, therefore, it is advisable to have the necessary means at hand to protect them against excessive wet.

When the plants have reached a desirable size, it is no longer advisable to afford them an annual repotting. We may mention *M. albidum*, an ever-green species, growing 6 inches high, with golden-yellow flowers pleasantly scented, appearing June to August; *M. aurantiacum*, orange-coloured flowers, with very glaucous, bluntly triquetrous leaves, stems erect, height 2 feet—June to August; *M. blandum*, flowers at first white, changing to red, leaves smooth and narrow, stems ascending, height 1 foot—June; *M. Cooperi*, a beautiful purple flower, solitary, about 2 inches in diameter, leaves terete and glaucous—a much-branched spreading herb; *M. cordifolium* and *M. crystallinum* are known to every one, the first as a carpet-bed plant, and the second as a rock plant in hot dry places, where scarcely anything else would grow, and associated with eating as a "garnishing" plant; *M. deltoides* has rose-coloured flowers, appearing in cymes, sweet-scented, an erect shrubby species, with red-brown branches; *M. floribundum*, with pale-red flowers, the petals having a white base; leaves nearly cylindrical, branches spreading and numerous—May to October. *M. spectabile*, a fine red flower, 2 inches in diameter; leaves glaucous, stems dwarf floriferous ones, ascending, height 1 foot; floriferous May to August. *M. violaceum* has flowers that vary in colour from blush to violet; peduncles one flowered, leaves partly terete, glaucous, height 1 to 2 feet. The species are numerous, and but few are obtainable at our nurseries.

HOME CORRESPONDENCE.

FILBERTS AND COBS.—A number of nut-bushes is desirable in all south-country gardens, and they succeed wherever the common Hazel thrives in the hedge-rows. The best kind of soil in which to grow them is a good deep light loam, and the aspect sunny, although I have seen very heavy crops in Kent taken from trees growing in a somewhat shaded part of a garden. The bushes should stand 12 to 14 feet apart, possess clean stems 18 inches high to the lowest branches. The common method of training them is that known as "basin," and to give them this shape three to five young shoots at the proper height from the ground and at equal distances apart, should be selected, staking these outwards, and always keeping the middle open. Where large numbers of bushes are grown, a skilled pruner will in a few years build up good specimens 6 to 7 feet high without staking. The chief points to observe after the bushes are started in the proper form are to keep suckers in check, and to remove coarse shoots, and encourage fruitful twigs. The principal pruning should not take place before the month of March—a little earlier or later according to character of the season. There are various methods of storing the nuts, so as to keep the kernels sound and sweet for a good length of time. Some cultivators store them in jars, sprinkling a little salt over them, and others expose them to sulphur fumes to prevent the husks becoming mouldy, and then store them in a cool, dry place. But the most successful way that I have practiced is to gather the fruit when fairly ripe, and keep them in a dry place for a few days, turning them over occasionally, and then to place them in tubs lined with dry straw and cover them, and stand the tubs in a somewhat damp place. In this way I have kept the fruit plump and sweet for nine months—Filberts being smaller and earlier than Cobs, should be used first, and need no storing. The Kentish Cob is the variety mostly grown for market purposes, it is a sure cropper, producing large bunches, and is a heavy bearer; while the true Kentish Filbert is the best flavoured, and Filbert Prolific the heavier cropper of the two of the Filberts. *H. Markham, Margate.*

A DWARF-STEMMED MUSA.—In the *Gardeners' Chronicle*, October 29, in the report of the Fruit Committee, mention is made of a dwarf fruiting form

of M. Cavendishi, the plant fruiting at a height of 5 feet. The Committee wished to see it again, there being a possibility that the plant had prematurely fruited on this occasion. It may, therefore, be of interest to many if I state that such a variety has been in cultivation during ten years at least; in the autumn of 1887, when I took charge of the gardens here, a small stunted-looking plant of *Musa* came here amongst a lot of other plants. At the time, I was told that this was a variety that did not fruit. The plant was grown amongst a mixed collection of stove plants, and in due course it produced rather a small bunch, but the individual fruits (or beans as called here) were large and of excellent flavour. Some suckers were detached and potted, which grew freely, and fruited in about fifteen months, producing splendid bunches of fruit in every way. We have ever since grown a number of plants each year which fruit freely, and produce large clusters of fruit. Now not a single plant grown during the last ten years has exceeded $4\frac{1}{2}$ feet in height. I have just measured carefully three of our largest plants to-day, and give the correct dimensions. The first plant measured 3 feet 9 inches from surface of soil to stalk of fruit; the other two plants, exactly 4 feet each; leaves 4 feet 9 inches long by 2 feet 6 inches broad. I think this conclusively proves that Mr. Wythes' plant did not fruit prematurely as supposed. The plants at Stoke Park are grown in different houses, and all of them in tubs, and are used occasionally for house decoration; those grown in the large Palm-house being generally the tallest to fruit. As regards the question in what length of time a plant will be productive of fruit: a good deal, in my opinion, depends upon the dimensions and age of the suckers when severed from the parent plant, large suckers being also older, fruiting much quicker than small ones. Some plants I have simply cut down after the last fruits on a bunch have ripened, and allowed the strongest sucker to grow away in the same tub, merely affording a top-dressing of artificial manure. Such suckers fruit at less than twelve months old. I have often wondered, when seeing very tall plants in some gardens, why such were grown, when much dwarfer plants are obtainable. There is no difficulty whatever in fruiting plants in twelve months from the time the suckers are first potted. As a rule, our largest suckers have roots when separated from the mother plant, and they are potted in 10 and 12-inch pots according to the size, being transferred to tubs made of paraffin casks cut in two. Such tubs last for years, and by painting the wood light green and the hoops black, they look very neat. No plants are less troublesome to cultivate than *Musas*, provided the soil is rich, and they are well supplied with moisture at the roots and in the atmosphere, and a temperature such as suit *Crotons* is afforded. Insects give no trouble whatever. *D. Kemp, Stoke Park Gardens, Slough.*

THE PURPLE BEECH.—For some years a considerable section of the Press and society have been raising a hue-and-cry against coloured and variegated trees, shrubs, herbaceous or evergreen plants. And the cry went a long way in arresting the planting of Purple Beeches. The controversy brought to the front, however, not a few powerful advocates of the other side of the question. Notable among the latter was the late Chief Baron Pollock, who largely furnished his well-stored garden with coloured variegated-leaved plants. His opinion, which I heard from his own lips, was that purple, gold, silver, in a word, most, or all, variegated plants, were not only more beautiful, but more perfect than green ones! Certain vegetable physiologists and natural philosophers hold that [some] variegated and extra coloured plants are weaker, that is, less finished than green. Thus, variegation is a proof of weakness, not strength, and results from something undeveloped, rather than anything added to, the leaves and branches. On the other side, the late Lord Chief Baron held that variegation was another step towards higher evolution and more perfect development of plant life. Be that, however, as it may, few who were privileged to hear this learned lawyer discourse on the merits and beauties of variegated plants, or saw him enjoying his learned leisure among them, would be likely to forget your admirable illustration of Miss Sullivan's Copper Beech in a recent issue of the *Gardeners' Chronicle*, which ought to give a powerful fillip to the planting of this variety in parks and pleasure-grounds. At first sight there seem to be or to have been two giant Purple Beeches at Fulham. Or can this be the late Bishop of London's tree under new proprietorship? [No.] It is some years since I made a pilgrimage to Fulham to see the Bishop's Purple Beech. It was then one of the finest in the kingdom. Another very

fine one as regards symmetry, size, and colour, stands on the lawn at Hardwick House, Bury St. Edmund's. The third notable specimen also visited by the writer some years since was at Enville, noted by you last week. I had the pleasure of seeing some notable Beech and other fine trees some years ago in company with the late James Barnes, then of Bicton, Devonshire. And he laid down as a law that no one could see a giant Beech, Cedar, or other tree in all its magnificence and stately grandeur unless he approached close to the stem and rubbed noses with the bole, and looked long, earnestly, silently through the branches. You have already told your readers in a sentence or two a few of the entrancing sights that will hold them spell-bound under Purple Beech if they will take the late James Barnes' or your advice. In planting Purple Beeches as garden, lawn, or park trees, it is important to select a good strain. There are several, such as Rivers' strain, larger, and darker than the normal types. The latter may be also greatly improved by careful selection. Only seeds from the deepest-coloured Copper or Purple Beech-trees should be chosen, and the best forms should be propagated by budding or grafting. Seedling Purple Beech should also be carefully selected; the greenest may be planted in woods and plantations for cover or for timber. By such means the percentage of fairly good Purple Beech may be raised in seedlings from 20 to 80 per cent. Will the fortunate growers of these purple giants say if they have noted their blushing into deeper purple foliage with their advance in years? Finally, what effect, if any, they have noted the age of the Purple Beech has in increasing the percentage of purple seedlings, and intensifying the colour of the foliage, and glowing, delicate coppery shootlets. *D. T. F.*

PROPAGATION OF AN ALOE BY LEAVES.—Every gardener knows from his own experience that a number of soft-leaved Dicotyledons may easily be propagated by their leaves (*Gloxinia*, *Begonia*, *Coleus*, &c.), but I doubt whether it has been often observed, that a monocotyledonous plant, except bulbous plants, can also be propagated in this way. When staying at La Mortola, I remarked one day a large rosette of a *Gasteria*, whose leaves were hanging downwards, not standing stiffly upright as usual. Pulling one of them a little, I had the separated leaf in my hand, the lowest part of it embracing the stem being completely rotten. This was the case with all the leaves, in number about a dozen. I was rather surprised to find that that part of the leaves, where the healthy part began, was somewhat swollen and emitting several yellow healthy roots. As I could not imagine for what purpose the leaves had produced the roots, I gave them to the gardener, who laughed when I told him to plant them in pots. Visiting those pots a fortnight later, I found at the bases of the leaves a large number of young plantlets, some having already their own roots, whilst other smaller ones, and a great number of buds were still supported by the parent leaf. Two weeks later each leaf could be planted out as a tuft of from ten to twenty young *Gasterias*, 4 inches high, surrounding a single leaf, measuring 14 inches. *Dinter, Salem, S. W. Africa.*

LAPAGERIA ROSEA.—*Lapageria rosea* and its varieties are reckoned among tender plants—at least, in most parts of this country; but still there are warm corners in many a garden where it might be cultivated in the open with a fair amount of success if a little care were bestowed in safeguarding the plant in times of hard frosts. Some years ago I raised a number of plants from seed, and not having sufficient space in the greenhouse for all of them, I determined to risk some outdoors. The plants had been nursed in a cold frame, and were, in consequence, well prepared for putting out-of-doors. A narrow sheltered border was selected, but this I have since found is too restricted; the result is, however, surprisingly satisfactory. These plants have passed through two winters unharmed, with only the protection of a curtain of Frigi domo. Last spring the east wind blew for weeks continuously, and the temperature was often at or below the freezing-point night and day, yet these *Lapagerias* were unharmed, and by the middle of June they had made growths 3 to 4 feet in length, and that, too, at a time when hardy vegetation had been almost at a standstill for several weeks. During the past three weeks we have had most variable weather, and for three days, at the least, a black London fog enveloped the district; and to-day (December 1) I am enabled to send you bunches of flowers which will compare favourably with those cut from a plant growing in our greenhouse. [Excellent blossoms, in clusters, those from the out-of-doors plants being slightly deeper in

tint than the others. Ed.] The seed-vessels that I send grew on an out-of-doors plant. On plants grown under glass a seed-vessel requires fully twelve months to ripen, reckoning from the date when the bloom is fertilised. *R. B. L., Dulwich.*

CHRYSANTHEMUM-RUST.—It is a good thing the above pest has not yet become a general disease among "Mum" growers; there are some, I believe, quite unacquainted with it. I may say that I never saw such a pest for disfiguring the foliage of any plants. My advice to those who are plagued with it is to do away with their affected plants, and procure clean stock from a large grower or nurseryman, and during the summer to grow the plants on a fresh site, where *Chrysanthemums* have not stood before, and see that the site is a well-drained one, as anything in the way of stagnation encourages the disease. *A. J. L., Wyfold Court.*

TIMELY PLANTING OF BULBS.—In a recent issue of the *Gardeners' Chronicle*, p. 388, the Rev. G. Engleheart criticises my note in that for Nov. 12, on the planting of Daffodils, Hyacinths, Spanish Iris, and Snowdrops out-of-doors. He says, "I must assert that the middle of November is altogether a bad and wrong time to plant these bulbs;" adding, "and my opinion would not be high of the knowledge or the prospects of the market-grower who would plant on any large scale at so late a date." It should be here stated that my article on this subject was sent to the *G. C.* office about the middle of October, and it may have been delayed in publication because the Editor considered the then dry state of the ground made bulb-planting a difficult matter. During the interval that elapsed between the time my "copy" reached the office and the date of its publication, and assuming this to be the fact, I think the Editor under the circumstances was fortunate in not printing the article earlier. It may interest Mr. Engleheart to learn that I have transplanted rows of Snowdrops in shrubby borders which had been taken from established clumps on the place in June, before the grass-like foliage had quite died down, with very satisfactory results, the bulbs having been dropped into holes made with a crowbar, the plantings extending to a total linear distance of about three miles. Acres of Daffodils being transplanted in the same place in "masses" among the trees at the same time as the Snowdrops, and with like results, the Daffodils having been dug up for the purpose in some of the estate woods. Thus it will be seen, that in the matter of bulb-planting, as in the case of many other things, success is often attained by following very different methods of procedure. No doubt the *modus operandi* practised by market gardeners, even in the matter of bulb-planting, differs a good deal from that followed by the eminent *Narcissus* hybridist, both having different objects in view, but on this account it does not necessarily follow that the former is wrong. Perhaps Mr. Engleheart may not be aware of the fact that, with the exception of Roman Hyacinths, Roman and paper-white *Narcissus*, bulbs for potting-up and planting out generally do not arrive in this country much before the end of September. Has your correspondent ever noticed the time the bulbs, which annually make such grand floral spring displays in the London parks are planted? These bulbs have been supplied by Messrs. James Carter & Co., High Holborn, London, for several years past, and the cultural instructions given in this eminent firm's admirable bulb list for the present year go to show that the several bulbs—Hyacinths, Daffodils, Snowdrops, &c.—should be planted from September to the end of November. Mr. T. W. Birkenshaw, who, like Mr. Engleheart has raised many good varieties of the *Narcissus*, and has had charge of a large and valuable collection of *Narcissus* at Toley Hall, Sheffield, remarks in his pamphlet, *The Narcissus or Daffodil* (p. 24), "The bulbs (Empress and Horsefield) should be potted about the middle of October, or earlier, if possible"—that is, as soon as properly-raturated bulbs can be obtained. On the front page of the *Gardeners' Chronicle* for November 19 and 26, Mr. W. Baylor Hartland and others call attention to their bulbs (including six choice varieties of the Daffodil), both firms being distinguished bulb "specialists." Mr. Engleheart says that at the time "Mr. Ward's notes appeared, my *Narcissus*-beds were being Dutch-hood," adding, "Extreme care was necessary not to damage the foliage, which was then breaking the surface." Let us hope his plants may not get damaged by frost. Your correspondent says, "No bulb deteriorates so speedily when out of ground as the Spanish Iris, which, he states, is best planted in August." I should like to know where bulbs of the

Spanish Iris can be obtained from in August. Last year I did not obtain my supply of these bulbs until the end of September, and this year they reached me ten days later. Do not the above facts go to show that your correspondent got a little "mixed" in his statements *re* bulb planting? H. W. Ward, Nov. 29.

A GREAT GRAPE CLASS.—The Shropshire Horticultural Society have, I believe, done much to encourage good Grape-growing, and, as stated in the issue of the *Gardeners' Chronicle* for December 3, p. 407, the Society offers £100 in the class for twelve bunches in six varieties next year. Such liberal prizes will doubtless induce many first-class cultivators to compete. I am pleased to observe a hope expressed that judges will be less influenced by mere size of bunch than by the size, finish, and colour of the berry. I also hope that each variety will have its proper value attached to it. It is most discouraging to exhibitors of even and good-sized bunches, good in berry, and highly finished, to find that the judges have been carried away by mere size of the bunches, and high quality scarcely recognised. Mere size in most kinds of fruit, flowers, and vegetables, certainly command a more ready sale in the market; but if the public are to benefit by exhibitions, a correct standard should be set up. It would be a great help to exhibitors and judges if a relative value were put on the leading varieties of Grapes, so that there would be a more uniform result from judges. I find some judges go in for quality and finish, other things such as size and form of bunch being equal; whilst others show a preference for large bunches—so that if two sets of judges were independently asked to judge the Grapes, one set would reverse the other's decisions. As an exhibitor of Grapes, I shall be glad to have the views of others on this subject. *Exhibitor.*

RED GLASS FOR PLANT-CULTURE.—I enclose cutting from the *Spalding Guardian*, a local weekly paper, in case you think fit to reproduce it for the opinion of your scientific readers. As everybody knows, when white light is split up by passing through a prism it is resolved into its component parts, viz., violet, indigo, blue, green, yellow, orange, and red, the red being the heating end of the solar spectrum. This gives some colour, if I may use the word, to the Frenchman's statement. Ruby glass is expensive, but I propose trying a cheap experiment, my plan being as follows: the glass on the inside of a small frame is coated with picture-varnish, the thinnest red-paper is stuck on to this, and another coat of varnish supplied—rough specimen enclosed. I am inclined to think that the experiment may fail, even supposing that the Frenchman's theory is correct, and for this reason the varnish may possibly interfere with the transmission of actinic rays, but I think it worth a trial. R. K. ("Gardeners, amateur and otherwise, will be interested in a discovery that has been made by Camille Flammarion, the French astronomer. He has found that plants grown in a red hothouse become in a given time four times as big as those exposed to ordinary sunlight. The poorest development—practically amounting to failure—was obtained under blue glass").

NEW AND RARE PLANTS.—*Phlomis cashmeriana* is now being distributed by Mr. Max Leichtlin, of Baden-Baden. It is a pink Himalayan Sage, figured by Royle on plate 75 of his *Himalayan Botany*, which it shares with *Salvia hians*. It should be a very pretty plant, and I am glad to add it to my collection, and hope to bloom it next summer. Another beautiful plant I have just received from the same source is *Adenophora Potanini*, a blue Campanulad of apparently most free-blooming qualities, judging from the woodcut in the *Semaine Horticole* three weeks ago. Also *Campanula betulifolia*, with creamy-white flowers quite new to me. W. E. Gumbleton.

RIVIERA NOTES.

I HAVE, thanks to you, found in the *Gardeners' Chronicle* of February 12 last, a note which has been of great use to me on the Mammoth or Limbless Cotton. I have some seed sent me from the Georgia Experimental Station, and have obtained a wonderful result, raising splendid plants, remarkably early and productive. A more wonderful result still was obtained at Tunis, where I sent some of the seed.

This year I have been experimenting in a new direction. I have had sent me from the Soudan, the

Congo, Madagascar, Brazil, and Mexico, some earth, and that tropical earth, under the Provence sun, has yielded me many plants; the greater part quite unknown to me, and some perhaps new to science. The experiment is not yet completed, and I am waiting until it is, before determining the plants, if they live through the winter.

We have had terrible storms the last few days on the Mediterranean, and on the shores. We have had east and west winds and rain unprecedented for twenty years. In the two months, October and November, we have had a rainfall of nearly 17 inches, nearly two-thirds of the average for the entire year. We have been literally swamped.

I hope soon to complete a small botanico-horticultural monograph on *Pittosporum*; trees and shrubs which are really splendid in this climate. It is also well suited to Cacti, as you may judge by the photograph sent herewith, which represents *Cereus Spachianus*; the flowers white, very large, nearly 10 inches across, and which perfume the surrounding air for nearly a thousand yards. C. Ndm., Antibes.

FLORISTS' FLOWERS.

CROWN AND TERMINAL-BUDS OF CHRYSANTHEMUMS.

M. E. CALVAT in a paper published in the *Journal de la Société Nationale d'Horticulture de France* for October, discourses on the method of obtaining the large flowers of Chrysanthemum. From this paper we extract the following:—

"In spite" says he "of all that has been said, and perhaps owing to a play on the word crown, many persons still confuse the crown-bud with the terminal-bud. Any bud is called a crown-bud which appears from the beginning of the season up to the first days of September. Only those which appear in August should be allowed to flower; before that month they should be relentlessly suppressed, and one or many of the stems which accompany them, prolonged to the following bud. The first bud which appears is that which marks the first ramification of the plant.

In addition to the season at which it appears, the crown-bud is also recognisable by the peculiarity, that it is always surrounded by leaf-buds or shoots arranged in a crown around it.

The terminal-bud is also surrounded with a crown of buds, but in this case of flower-buds. The crown-bud, when it has been isolated for some time, may be known at first sight by the long stalk, sometimes too long, and clothed with leaves which supports it. This bud is the one usually chosen for developing large flowers in the Japanese, Japanese incurved, and reflexed varieties.

The terminal-bud makes its appearance about the beginning of September; it may be easily recognised, as it is surrounded, not like its forerunner by leaf-shoots, but by flower-buds. Thus, while the crown-bud is isolated by suppressing the leaf-buds which surround it, the terminal bud is isolated by removing the flower-buds which accompany it.

If the epithet of "crown" is more or less justified, the term "terminal" is much more so. It is, in fact, the bud which terminates the stem of the plant; it is the highest in position, although the last to be developed, and after its production, no further growth, either floral or leafy, takes place. [We have suggested the use of the word "final" for this bud, to prevent further confusion. ED.] Unlike the other, the terminal bud has its stem furnished along its whole length with leaves; it is the bud to be encouraged in the tubular, incurved and heavy varieties.

We must, therefore, adopt a general rule, leaving each cultivator to decide which of the crown-buds (developed at the beginning or end of August) is most suited for this or that variety. The rule is in central France not to take [that is, reserve or isolate] the crown-bud before August 10, in other words, that all those are taken which appear after that date. In thus acting all is done for the best, whatever happens.

In the north of France and England the crown-bud may be "taken" from August 5; in the south it may be deferred until August 15.

While thus establishing a general rule for the majority of varieties, it should be noted that for Madame Carnot it is as well, in an ordinary season, not to begin to take the bud before August 20; and the same rule applies to Mdlle. Lucie Faure, C. Harman Payne, M. B. Verlot, President Nonin, &c. As an exception, Madame Ed. Rey, on the contrary, yields good flowers on buds taken after August 1; while Calvat's Australian Gold, Madame Fossier, Madame Ricoud, Le colosse Grenoblois, Marie Calvat, &c., are no exception to the above rule.

ZONAL PELARGONIUMS.

On p. 333, Nov. 5, there appeared a note by "A. D." in praise of the zonal Pelargonium for blooming during autumn and winter. Probably many who visited the November and December shows of the National Chrysanthemum Society at the Royal Aquarium saw ample demonstration of the extraordinary brilliancy of colour these flowers afford, beside which the Chrysanthemum paled very considerably. I do not intend to dwell longer, however, in contending for an established fact, but, rather to give a selection of the most effective varieties that was made recently when I had the pleasure to inspect the collections of Mr. T. B. Haywood at Woodhatch Lodge, and of Messrs. H. Cannell & Son, Swanley.

Taking the singles first, there appeared to be little to choose for scarlets between Charles Maison, W. E. Cordon (new), and Lord Aberdeen. Very effective white varieties are Niagara, Snowdrop, and Dr. Nansen, all of these being of good size, but differing very slightly in purity of colour and symmetry of form. Lovely pinks are Gertrude Pearson and Countess of Buckingham. The former is especially meritorious, and is not a novelty; the white centre is a point of great attraction. The best orange-coloured varieties were Wordsworth and A. H. Arderne, and the most perfect purples Lord Reay (new) and Sir Jas. Kitson. Then, in Nicholas II. we get a very fine variety with scarlet flowers, shaded purple. King of Crimson is the best representative crimson-flowered variety. Of salmons there are many good and distinct varieties, which differ considerably in the degree of colour and in the markings. The best were Mrs. P. Routh, Kate Farmer, and Inverness. Beauty of Kent (pink and white) and Lilacinum (lilac-pink) should be included also; and I might have added an additional scarlet in Countess de Morella (new). This is a very effective variety, and has a distinct, striking white eye. The greatest novelty in the singles at Swanley was an unnamed seedling, scarlet, with white eye. The flowers noticed were 2½ inches across, and it will be much the largest bloomer in this section, and its form is excellent. It was, I believe, proposed to call it The Sirdar.

The double-flowered varieties, though very useful as cut flowers, do not, as a rule, bloom so freely, or make so grand a show upon the plants. Raspail Improved, Double Jacoby, Beauté Poitevine (salmon), Lord Derby (pink), René Bazin (salmon), The Pearl, and Boule de Neige (both white), and many others, are very useful.

But in this semi-double section, the most attractive and novel are the double whites, with picotee margins to the pips; Madame Alcide Bruneau, pure white, edged with magenta; and Fraicheur, creamy-white, with deep pink or rose margins, are really beautiful.

Many gardeners fail in blooming Pelargoniums successfully in the winter because they do not possess a suitable structure in which to house the plants after the summer is past. The plants may be grown well during the summer, and by proper pinching and full exposure, a shrubby and short-jointed habit of growth obtained; but they must be given a perfectly light and pleasantly warm structure when about to bloom. Nothing is more suitable than a little span-roofed house where they may be stood upon stages, not far distant from the glass, and where the temperature, ventilation, &c., may be regulated with regard to the needs of the Pelargoniums alone. Any excess of humidity in the atmosphere of the house, or a long continuance of stagnant air even, will be injurious,

and if the Pelargoniums be shaded by or huddled together with other plants in an ordinary greenhouse, they will fail completely. It is well also to cease pinching the plants in September at the latest, that they may make the necessary after-growth before lessened light and shorter days occur to make the growth weak. Nevertheless, the time of blooming must be greatly dependent upon the date at which the pinching be discontinued. P.

CHRYSANTHEMUMS.

The Season's Novelties.—The introduction of improved varieties is one cause of the immense interest taken in the Chrysanthemum. Any variety that shows improvement in form, colour, or general usefulness, is sure of a welcome. Now that English-grown seed is so easily obtained, it has become quite common for cultivators generally to turn their

build. The evenly-grown florets are lance-shaped. The colour is a mixture of coppery-red and gold, and is pleasing. The habit of growth is good, being from 4 to 5 feet in height.

Melusine is another of the same set. The blooms in their general formation are somewhat similar to those of Viviani Morel. The colour is distinct, being rosy-white, flushed with purple on the surface.

Soleil d'Octobre is a gem for early November flowering. Like many other varieties, the whole character of the flower may be altered by culture. Blooms developed from ordinary crown-buds are furnished with broad lance-shaped, beautiful florets. When a too-early-formed bud is selected, the florets become narrow, irregular, and almost colourless; whereas the flower should be light-yellow-coloured.

Reginald Godfrey is an English-raised seedling, and promises to become a standard variety. In form it is

to be a favourite. The narrow old rose and yellow-coloured florets curl at the tips slightly.

Autumn Glory was raised by Messrs. Hill & Co. in America, and reminds one much of Etoile de Lyon in the shape of its florets and general build, also in the variation in colour occasioned by bud selection. If very early buds be selected they produce pale-coloured blooms. When seen in its best character it is desirable.

Chatsworth has flat florets, that incurve slightly at the tips; there are, however, enough of them to build up a full solid bloom, which all ought to obtain, as its distinct colouring is desirable in any collection—white flushed and striped with purple.

Latiana (Calvat) surely belongs to the Carnot family. In my opinion it too closely resembles G. J. Warren to be desirable; time will determine.

Joseph Brooks is margined and flushed with crimson on a bronze-yellow base, a semi-incurving variety.

President Nonin is one of the best of the incurved Japanese section; the florets are broad and massive when developed from the right bud, otherwise they are narrow and loose. In colour it is rich amber.

Duke of Wellington belongs to the same type; the brick-red or terra-cotta colour is plainly seen on the surface, as the florets do not incurve so closely as some. The reverse is salmon-buff.

N. C. S. Jubilee, although not quite new, deserves to be better known. The colour is rose-peach. This, coupled with its stout, closely incurving florets, makes it an attractive variety.

Robert Powell, shaded chestnut or terra-cotta, with gold reverse.

Beauty of Adelaide has rich rose-coloured, loosely incurving florets.

Milano is a rich terra-cotta-red, with lance-shaped florets.

Baron Adolphe de Rothschild was sent out by M. Calvat two years since, but has not been staged at its best yet. Although white-flowered varieties are numerous, this deserves attention, as when well grown it is one of the most massive blooms in existence. E. Molyneux.

RHODODENDRON GRAFTING.

THE usual species used for stocks are Rhododendron ponticum or R. catawbiense, although seedlings of any vigorous species or hybrids make good stocks for R. hybridum. The stocks should be three to four years old, and have been established in pots for one year. Grafting should begin in January, and may be extended to March, and in August. Those worked in heat may be grafted either saddle or wedge, the first making the stronger union; the second is good for small bits of choice varieties. Side or whip grafting is also a common method, the stock being shorn of most of the leaves, but it is not cut down to the graft till the latter has formed a union. Double glass should be used to cover them, that is, the grafted stocks should be put into a case, or under hand-glasses in a propagating-pit having a gentle heat and moist air. Tender leaves made under glass will not stand the summer sun. In April good results may be obtained in a cold pit. Whip-grafting is best for grafting in the month of August.

FOREIGN CORRESPONDENCE.

VERSAILLES.

EVERYONE who visits the capital of France should take a trip to Versailles, where the park and palaces contain such a store of French artistic and architectural treasures. From a horticultural point of view, the town and its environs are particularly interesting. There are firstly the parks, belonging to the Royal Palace and the palace of Trianon. Laid out by that celebrated landscape gardener, Lenôtre, during the reign of Louis XIV., these parks, with their magnificent fountains, are the great attraction to visitors of Versailles. In the vicinity of the Royal Palace the grounds are laid out in a formal style, with terraces leading down to the park, which, although divided by straight walks, is otherwise laid out in a more irregular way. In harmony with the straight outlines of these terraces are the clipped pyramids of Conifers, and the square clipped hedges bordering the flight of steps leading from one terrace to the next below.



FIG. 120.—RHODODENDRON :
WEDGE-GRAFTING.

FIG. 121.—RHODODENDRON :
SIDE-GRAFTING.

FIG. 122.—RHODODENDRON :
SADDLE-GRAFTING.

attention to the raising of new varieties, or to developing the growth of plants raised by others.

So many new and valuable varieties are introduced every year, that it becomes absolutely necessary to strictly weed out, even from the largest collection, those least deserving of cultivation.

With a view to assisting those readers of the *Gardeners' Chronicle* who have not had the opportunity to inspect the novelties for themselves, I purpose noting those that have come under my own observation. All that I mention may not be absolutely new, but they possess points of excellence that cannot be safely overlooked by exhibitors who aim for the highest honours.

Japanese varieties are increased much more rapidly than any other section, owing to the greater ease with which they produce seed. I will therefore speak of this section first.

General Paquis was sent out by M. Calvat in the spring of the present year. The bloom itself reminds one of Mrs. Falconer Jamieson in its character and

not unlike Miss Dorothea Shea. The blooms are of massive build, and there is refinement in the florets. The colour on the upper-surface is rich but soft rosy-crimson, the reverse old-gold.

Lord Ludlow is one of the most promising varieties of this season. The blooms are large and well built. The colour is distinct, having an amber base, each floret edged and flushed crimson.

Miss Nellie Pockett is an Australian-raised variety, with narrow florets that curl upward at the tips. The colour is creamy-white.

Mrs. White Popham is of massive build, having broad florets, which incurve slightly at the tips. In colour it is blush-white, heavily flushed with purple; silver reverse.

John Pockett is another Australian. In form it is identical with Robert Powell; also an incurved Japanese. The reverse colour is chestnut, and the surface dull crimson.

President Bevan was sent out by M. Calvat this year. The florets are a trifle too close for the flower

In one of the deeper lying parts, near the palace, much floral wealth is displayed in the borders. They are chiefly filled with scarlet *Pelargoniums*, yellow *Calceolarias*, and blue *Ageratum*, together with *Coleus Hero* and *Verschaffelti*, that soften the contrast between the hard colours of the three first-named plants. Much use, too, is made of *Gaura Lindheimeri*, sending its loose flower-spikes far above the other plants contained in the border. At intervals pyramids of *Hibiscus*, *Syringa persica*, &c., are planted in the same bed.

Round the Palace of Trianon the designs are more complicated, and bordered by low Box edging. Here much use is made of *Coleus*, *Iresine*, the different kinds of *Alternanthera*, and other low carpet-bedding plants. A fine effect is produced by some groups of *Salvia splendens*, *Ingenieur Clavenad*, whose splendid red flower-spikes stand out advantageously against a background of dark green shrubs. *Cannas* also play a large part in the decoration of this park.

M. DUVAL'S NURSERY.

In and around the town there are a good many nurseries. In the first place comes the well-known horticultural establishment of Messrs. Duval et fils. In the [houses of this firm many plants worthy of note are to be found. One of the specialties for which the firm is known are *Bromeliads*. Whole houses filled with these tropical American plants are to be seen there. Amongst the plants in flower I noted firstly *Vriesia rex* ×, one of the many hybrids obtained by the firm. The bright scarlet-coloured spikes attain a length of nearly 1 foot. Then there is the new *V. Poelmanni*, shown last spring at the Ghent show. Further, *Caraguata lingulata splendens*, sending up its cup-like inflorescence just above the foliage; *Caraguata cardinalis*, with lighter-coloured foliage, and bright red and yellow flower-cups. Remarkable, too, is *Streptocalyx Vallerandi*, a plant with narrow spiny leaves. The flower-spike has the form of a long pyramid, rounded off at the base. The bracts are dark salmon-red, with ramified spikes of blue flowers at the bottom of each leaf. The whole, without the petiole, measures 1½ foot in length. Then there is the beautiful *Tillandsia Lindenii vera*, with narrow, hard leaves, and a flat, elliptical inflorescence, composed of bright rose-coloured bracts, very close together, from which spring large blue flowers; *Caraguata (Tillandsia) Zabni* has graceful, low, red-veined leaves and bright yellow branching flower-spikes. Amongst the *Bromeliads* of ornamental foliage are *Caraguata Peacocki*, with transparent red leaves, broadening, and finally striped with white at their base; *Nidularium Innocenti var. erubescens*, a compact plant, with dark brown, clear foliage; further, *Hoplophytum robustum variegatum*, with long, white, striated leaves, with finely dentated edges. *Tillandsia (Vriesia) tessellata*, of compact habit, with rather broad leaves, regularly striped lengthways with white lines, broken by narrow transverse lines. Hanging down from the roof in Orchid-baskets are the different kinds of *Cryptanthus*, the prettiest being *C. bivittatus*, *C. Beuckeri*, and *C. zonatus*, with wavy leaves, crossed by white and brown bands. Further there were *Vriesia splendens* major, with black cross-lines on the leaves, and long soft, red flower-spikes; *Billbergia thyrsoides*, with hard shiny leaves, and beautiful dark rose-coloured bracts. Four large houses are filled with Orchids. In one of them there was at the time of our visit a fine display of *Cattleya labiata*.

Another specialty of the firm is represented by the *Anthurium Scherzerianum grandifolium*, of which they obtained some new strains, notably those with very large dark scarlet spathes, and another of a salmon-red colour.

Further, there are grown in quantity *Azalea indica*, *Dracenas*, *Crotons*, and *Ferns*. Amongst the latter there is a large stock of *Adiantum æthiopicum* and *A. scutum*, both very good. Worthy of note is *Didymoclaena truncatula*; the young leaves of this plant are of a fine red colour. I noted, too, some specimens of *Asplenium nidus-avis*, the Bird's-nest Fern, with fronds nearly 2 feet in length.

Amongst other plants is remarkable *Ropala elegans*, having long pinnate leaves, the whole plant covered by a brown woolly substance. Further, *Medinilla magnifica*, *Heliconia illustris*, *Alocasia metallica*, *Pandanus Veitchii*, and *P. utilis*, attracted my notice.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 22.—Present: Dr. M. T. Masters (in the chair); Mr. B. Nnett-Poë, Rev. W. Wilks, Mr. Michael, and Rev. Professor Henslow (hon. sec.).

Tea-plants overrun by Mites.—Mr. Michael gave an interesting account of a new species of *Acarus*, sent by Mr. E. E. Green, Hon. Gov. Entomologist of Eton, Pondalucya, Ceylon. They were forwarded in tubes filled with sterilised air, a plan which Mr. Green had found very useful for preserving fleshy insects in their natural form and colours. He also forwarded specimens of young Tea-leaves attacked by the mite, which causes considerable damage and loss of crop on the Tea estates in Ceylon. Mr. Green writes as follows:—"Some years ago I gave a description and figures of this mite in a little pamphlet on *Insect Pests of the Tea Plant*. For purpose of registration I gave it the provisional name of *Acarus translucens*, but I find that this name is already occupied by a different mite, described by Nietner in his *Enemies of the Coffee-tree*; therefore the insect is still nameless. I should be glad to have it properly identified. It is curious in laying two different kinds of eggs, one form being quite smooth, and another form rather larger and beautifully beaded. The latter is the most usual, and I have watched the emergence of the mite from this egg. I have only recently noticed the smooth eggs. The immature insects are very sluggish, the mature ones decidedly active. They attack the young leaves only. As each bud unfolds they move up on to it, deserting the older leaves, which, however, are permanently injured. The attack of the mite imparts a brown scaly character to the leaf cuticle, which persists throughout its life. When the unopened leaf-bud is attacked, the punctures are concentrated upon the groove and the infolded edges. This forms a permanent scar, appearing like a strong sub-lateral nervure on the expanded leaf."

Mr. Michael observed that the mite was one of the *Tarsonomi*, a group only lately known, but proving to be great destroyers of vegetation—e.g., Box-trees in the Turin Botanic Garden were all destroyed in one season. Professor Canastini, of Padua, discovered that the mite bored beneath the epidermis of the leaf. Another species attacks the Sugar-canes of Barbadoes, but does not appear to be so injurious, though fresh canes swarmed with the *Tarsonomi*. Few species are known as yet, but they are very destructive. They are extremely minute, and have consequently escaped detection until the last few years.

Dahlia crossed with the Sunflower.—Mr. Lowe sent fresh examples of his supposed hybrid. They were very much arrested in growth, and malformed; but they would otherwise be regarded as *Dahlia*s. It may be observed that M. Martin Cahuzac attempted to cross the *Dahlia* with the *Chrysanthemum*; but in his case, as with Mr. Lowe, the supposed hybrid did not appear to be very marked. (*Gard. Chron.*, Dec. 11, 1897, p. 417.)

Pear-within-Pear.—Mr. W. J. Clarke, Manor House, Benbrook, Market Rasen, sent an example of this not uncommon monstrosity; and Mr. Bennett-Poë brought another example. The Pear has no core, but in its place the apical bud develops into another pseudo-Pear; the terminal bud then attempts to produce a third or more, finally a tuft of small leaves at the top represents the still growing terminal bud.

Pyrus crenata.—Dr. Masters remarked that this tree is peculiar for retaining its large and handsome leaves for a time, after most other deciduous trees have shed theirs. The leaf exhibited was from a tree in a garden at Ealing. It is a native of Nepal, and a figure was given in the *Gardeners' Chronicle*, January 3, 1874, p. 17.

NATIONAL CHRYSANTHEMUM.

WITH reference to a paragraph in our last issue at p. 411, we are requested by Mr. Wells, Earlswood Nurseries, Redhill, to print the following letter:—

"In to-day's *Gardeners' Chronicle* (Dec. 3) you make a very grave error in stating that I promised that I would withdraw all imputations against the National Chrysanthemum Society, and also against the individuals to whom personal reference was made. I distinctly state this to be false, for I said, as plain as any man could speak, that I would withdraw it on condition that the National Chrysanthemum Society promised that trade exhibitors should show nothing but their own productions. This promise was not made; and I make no apologies to anyone, except, as I stated, that if Mr. Waterer was not in earnest when he said a certain trade grower would give £10 to any charity if anyone could find any rust (fungus) on his establishment (which we were given to understand by Mr. H. J. Jones that this challenge referred to himself). I wish to state, that as this false report has appeared in your paper, I shall apologise to no one, and am prepared to take the consequences." [We are informed that the statements we made are in exact conformity with the minutes passed at the meeting of the Executive Committee on the 28th ult. Ed.]

DECEMBER 6, 7, 8.—The last of the Chrysanthemum exhibitions for the year 1898 was opened at the Royal Aquarium, Westminster, on Tuesday last. Contrary to the practice last December, the exhibits were on this occasion staged on the

ground-floor, there being ample room for the display. On the first day the number of visitors was not large, and it was possible to inspect the blooms with a certain amount of convenience. The only fault in this respect was due to the insufficient light that fell upon exhibits in certain positions. Upon the whole the exhibition was very satisfactory in regard to quality, and judged by previous shows held in December, it was not lacking in extent. Many of the classes brought capital competition, and few only were seriously lacking in this particular.

The best Japanese blooms were contributed by Mr. LUNT, of Keir, who won the principal prize at the very successful show recently held in the Waverley Market, Edinburgh. There were not very many incurveds shown, but several collections in the class for twelve blooms were of satisfactory quality. Members of the trade helped the exhibition very considerably by staging large and attractive exhibits of cut flowers.

The Floral Committee met on the opening day, but naturally enough there were few novelties to be inspected. Japanese Mrs. T. Dalton, from Mr. N. Molyneux, the Committee wished to see again. It is a narrow-petalled flower of reddish and yellow tints. Mr. Molyneux also exhibited eighteen blooms of a pretty white Japanese named Mrs. M. Simpson. Mr. W. Wells, Earlswood Nurseries, Redhill, showed blooms of M. Fatzer. The only certificates awarded were in the cases of the two following varieties:—

RED L. CANNING, a brownish-crimson or red flower, that may be recommended as an effective decorative variety. It was shown by Mr. A. Felgate, Jun., The Nurseries, Merstham, Surrey, who had a nice group of plants in flower.

MADAME R. CADBURY, a soft, creamy-white Japanese, with moderately wide, good petals. A refined flower of much merit. (Mr. Weeks, Thrumpton Hall Gardens, Derby).

PLANTS.

There was but one exhibit of six bush-trained plants of single varieties, viz., that from Mr. W. Davey, gr. to C. C. PAINÉ, Esq., Hillfield, Haverstock Hill, N.W. The best display was made by the variety *Eucharis*.

A very pretty group of plants upon a table was shown by Mr. A. Newell, gr. to Sir Ed. SAUNDERS, Fairlawn, Wimbledon Common, in response to the class for a collection of flowering, berried, and foliage plants. Looking at the exhibit, one noticed *Euphorbias*, *Codiaeums*, *Cordylines*, *Begonia Gloire de Lorraine*, *Roman Hyacinths*, *Bouvardias*, *Cyclamens*, *Richardias*, *Solanum capsicastrum*, &c.; the centre was composed of a graceful Palm, nicely staged amidst white *Hyacinths*. 2nd, Mr. W. Howe, gr. to Sir H. TATE, Bart, Streatham, whose exhibit, though also very attractive, was scarcely so neat or tasteful.

Mr. W. ORPWOOD, Andover Nursery, Uxbridge, had 1st prize for a collection of *Cyclamens* in flower, his well-flowered specimens filling a table of considerable size.

The best collection of *Primula sinensis* was also contributed by Mr. WILLIAM ORPWOOD, who had a collection of nicely-bloomed plants that showed good cultivation.

CUT BLOOMS.

The best exhibit of twenty-four Japanese blooms, in not fewer than eighteen varieties, was from Mr. T. Lunt, gr. to ARCHIBALD STIRLING, Esq., Keir House, Dunblane, N.B. He had excellent blooms of *Matthew Hodgson*, *Simplicity*, *Mons. Hoste*, *M. Gruyer*, *Mrs. H. Weeks*, *Oceana*, *Khama*, *Mary Molyneux*, *Mrs. F. A. Bevan*, &c. The Scotsman was well ahead of the other exhibitors in this class, but Mr. R. Kenyon, gr. to A. F. HILLS, Esq., Monkham, Woodford Green, was a creditable 2nd, his blooms being of very even quality indeed; 3rd, Mr. W. Slogrove, gr. to Mrs. CRAWFORD, Gatton Cottage, Reigate. There were six exhibitors.

The class for twenty-four bunches of *Chrysanthemums* of any varieties, shown with stems attached, and in bottles, made a fine display, and the collection from Mr. W. Howe, gr. to Sir H. TATE, Bart, Park Hill, Streatham Common, was very meritorious. The blooms were of good size, and the stems and foliage vigorous and healthy; Mr. NORMAN DAVIS, Framfield Nurseries, Sussex, was good in the 2nd place; and the 3rd prize was taken by Mr. S. J. COOKE, gr. to A. N. STEPHENS, Esq., Holmbush, Hendon. There were five collections.

Twelve Japanese blooms, distinct, were shown well by numerous competitors. The best blooms were from Mr. T. Lunt. He had *Graphic*, *Simplicity*, *Australie*, *M. Gruyer*, *Mrs. H. Weeks*, *Khama*, *Oceana*, *Mdlle. P. Rivoire*, *Louise*, *Mathew Hodgson* (a very beautiful colour), *niveum*, and *Edith Tabor*. 2nd, Mr. R. O. NORCUT, Broughton Nursery, Ipswich; and 3rd, Mr. F. King, gr. to A. F. PERKINS, Esq., Oak Dene, Holmwood, Surrey, the quality of the collections being very even.

Mr. J. Sandford, gr. to G. W. WRIGHT INGLE, Esq., Woodhouse, Finchley, London, N., obtained 1st place for six Japanese blooms, distinct, and all of them were good; the varieties were *Silver King*, *G. J. Warren*, *Simplicity*, *Golden Gate*, *C. W. Richardson*, and *Madame Carnot*. A collection from Mr. LUNT was placed 2nd, and included a good bloom of *Madame Carnot*.

Incurveds were by no means poor, there being considerable quality evident in a class for twelve blooms in not fewer than six varieties. Mr. F. King, gr. to A. F. PERKINS, Esq., Oak Dene, Holmwood, Surrey, won the 1st prize, and his best blooms were *Mdlle. Lucie Faure*, *Bonnie Dundee*, and *Lord Rosebery*. Mr. F. G. FOSTER, Brockhampton Nurseries, Havant, was 2nd; and Mr. R. Bassil, gr. to D. H. EVANS, Esq., Shooters Hill House, Pangbourne, 3rd. There were eight exhibitors in this class.

Of twelve bunches of Japanese varieties in not fewer than

six varieties, the only exhibit was one from Mr. R. C. NOTCUT, Broughton Road Nursery, Ipswich, who showed commendably.

Mr. Jno. Hoath, gr. to A. W. CHAPMAN, Esq., Crooksbury, Farnham, showed the best six bunches of Japanese Chrysanthemums. The varieties shown were Etoile de Lyon, M. Pankoucke, M. Gruyer, Western King, &c. Mr. GEO. ELDER was 2nd.

The best collection of twelve bunches of large-flowered single varieties was from Mr. G. W. FORBES, gr. to Madame NICOLS, Regent House, Surbiton; these flowers were not so brightly coloured or fresh looking as the blooms in the same section at the November fixture. Mr. G. Felgate, gr. to the Duchess of WELLINGTON, Burhill, Walton-on-Thames, was 2nd.

For the best collection of twelve bunches of small-flowered single varieties, Mr. G. W. FORBES was the best exhibitor; the flowers were of fairly good quality, but the effect of the exhibit suffered considerably from the foliage, which was very poor. 2nd, Mr. W. C. PAGRAM.

Single flowers were better in the class for six bunches of large-flowered varieties, and Mr. A. FELGATE, jun., nurseryman, Harsham, had the premier exhibit. His varieties were, Captain Felgate (pink), Yellow Giant, Mrs. Felgate (white), a large-flowered seedling, and Duchess Elizabeth (deep buff).

Mr. J. TULLETT was the best exhibitor of six varieties of the small-flowered section.

There were also half-a-dozen classes devoted to amateurs, and one for single-handed gardeners. In the last-named class, special prizes were offered by C. W. Richardson, Esq., Sawbridgeworth.

SINGLE VASES OF BLOOMS.

Miss EASTERBROOK, The Briars, Fawkham, Kent, had the best exhibit of a vase of Chrysanthemums arranged with any kind of foliage, grasses, or berries. It was a large trumpet-shaped vase, splendidly furnished with large and small blooms of Chrysanthemums, and suitable foliage; 2nd Miss C. B. COLE.

Miss C. B. COLE also presented a very good illustration of a hand-basket furnished with autumn berries and foliage. There being four additional exhibits of like character.

The best vase of Chrysanthemum blooms (amateurs), arranged with decorative foliage, &c., was shown by Mr. W. C. PAGRAM, gr. to J. COURTENAY, Esq., The Whim, Weybridge, and although its arrangement was not specially good, it well illustrated the value of the single-flowered varieties. 2nd, Mr. A. PAGE, gr. to A. L. REYNOLDS, Esq., Ravenscroft, Moss Hall Grove, North Finchley.

MISCELLANEOUS EXHIBITS.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a number of bunches of blooms of the variety Miss Harvey, a white flower with tubular forked florets, spreading at the tips; a pretty variety for decorative uses. Golden Dart, an excellent decorative variety of larger size; Swanley Pink, King of Portugal, &c., were included. Particularly gay and bright were the plants of Gloire de Lorraine Begonias, and zonal Pelargonium blooms in sprays.

Mr. NORMAN DAVIS, Framfield Nurseries, Sussex, furnished a large table upon the floor of the building, immediately under the organ. In arrangement its features were similar to those in his exhibit before the last meeting of the Royal Horticultural Society, and reported on p. 390. The various vases, baskets, &c., were very tastefully furnished with blooms of exceeding good quality. The varieties especially noteworthy were Madame Carnot and its sports, but decorative sorts were also largely in evidence (A large Gold Medal was awarded).

Mr. H. J. JONES, Ryecroft Nurseries, Lewisham, had a large table on the ground-floor, near to the dining-gallery. It was beautifully furnished with cut blooms in handsome vases and on boards. The vases were sparsely arranged over a groundwork of Ferns, &c. The blooms generally were good, and included specimens of a number of the season's novelties.

Mr. THOS. S. WARE, Hale Farm Nurseries, Tottenham, had a small exhibit of Chrysanthemum blooms.

Mr. ROBT. OWEN, Maidenhead, had a very attractive exhibit of cut blooms of Chrysanthemums, including many English-raised seedlings and named novelties. Most of them were upon boards, and these were backed by a number in bottles.

THE SCOTTISH HORTICULTURAL.

DECEMBER 6.—The closing meeting for the session was held on the above date, the President, Mr. Todd, in the chair.

An epitome was given of the cash accounts of the Chrysanthemum show recently held in the Waverley Market.

The facts that were stated by Mr. Mackenzie, the Treasurer, tell their own tale of how the very best flowers, fruit, vegetables, and music draw and hold the cash as well as the fashion in Edinburgh.

	The amount taken at the door on the first day of the show was	£	s.	d.
First do. do.	...	393	0	0
Second do. do.	...	346	0	0
Third do. do.	...	343	0	0

Total £1088 0 0

The total income from all sources was £1301; total expenditure, £1092; balance, £209.

The expenditure included the following, among other items:—Music, £233; prizes, said to be the largest yet given, £430; printing, £34; advertising, £57; fitting up Waverley Market, £90.

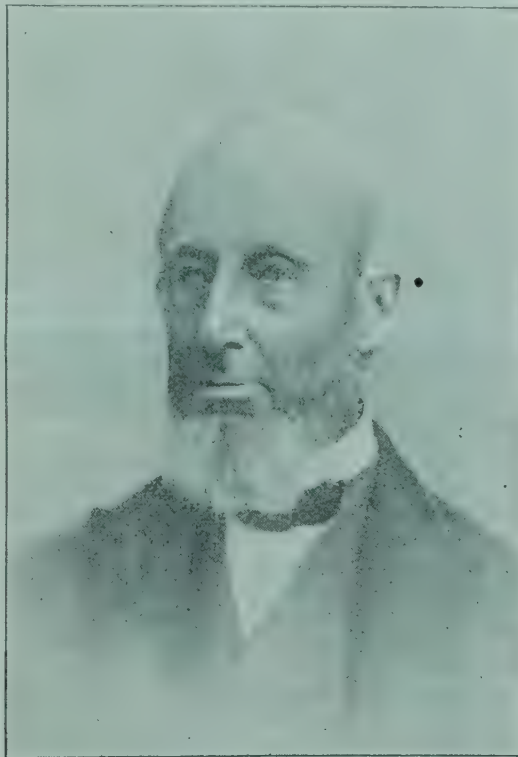
Neither has the Scottish Horticultural Association, which exercised such liberality in the Jubilee year, forgotten the

claims of charity this year. It decided last night to give the following sums to the following praiseworthy objects. There was £10 in addition, but I cannot recall the object: Royal Gardeners' Orphan Fund, £15; Gardeners' Royal Benevolent Institution, £15; Infirmary, £15; Hospital for Sick Children, £15; Prevention of Cruelty to Children, £10; two sick and infirm members, who have served the Society for many years, donations of £10 each. Surely in these and other matters provincial societies can hardly do better than go and do like Edinburgh.

There were many interesting exhibits before the meeting; and a paper by Mr. Wright, Falkland Park Gardens, South Norwood, on the "Arrangement of Hardy Plants in the Garden," was read by the secretary.

ISLE OF WIGHT.

The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on Nov. 3. The Chair was occupied by Dr. J. GROVES, B.A., J.P.; who was supported in the Vice-chair by Mr. R. J. ELDRIDGE, J.P., C.C., Chairman of the Technical Education Committee of the Isle of Wight County Council. Mr. T. Gibbs, C.C., gave a most interesting and instructive lecture on "Birds," dealing especially with their value to gardens and gardeners. The lecture was fully illustrated with lantern-slides, which had been obtained from the Society for the Protection of Birds. The subsequent discussion was enthusiastically taken up by the gardeners present.



THE LATE ALDERMAN WM. ROGERS, J.P.

Obituary.

ALDERMAN WILLIAM ROGERS, J.P., of Southampton.—At the end of November there passed quietly away, at the age of eighty-one years, from the scenes he loved so well, and did much to beautify, William Henry Rogers, Alderman and Justice of the Peace for Southampton, for many years head of the well-known Red Lodge Nursery, and an enthusiastic arboriculturist. The removal from life of such a man leaves both local horticulture and local government something the poorer. The nursery of Red Lodge, situated on the high ground at Bassett, and in a very lovely district, was founded by the late alderman's father, William Rogers, in the early years of the fast-dying century. Originally of a wild, heathy nature, by dint of energy and labour, acre after acre was gradually rescued from barrenness, and made to produce luxuriant growth of trees and shrubs of all descriptions, and for many years the place had become, during the Rhododendron season of blooming, one of singular beauty and of attraction to the population of the town and neighbourhood,

who, on a free invite, flocked to see the beauties of that nursery. In a book which lies before the writer, written by the late alderman's grandfather, John Rogers, then in his eighty-fourth year, on *Fruits at Red Lodge*, where it seems he had retired, so that he might end his days in pleasant surroundings, he mentions that in the Southampton nursery, now carried on by his son, "all the varieties of fruits he describes are grown, and fully tested, that the public may not be disappointed in their purchase." This old gardener's longevity seems to have been inherited by his kind-hearted grandson. The late alderman occupied important offices in the town government, especially as chairman of the Cemetery Committee; and his work in this respect, the contiguity of his residence, and his eminent horticultural tastes, made him the special guardian of Southampton's splendid common—a huge wild expanse close to the town, such as few boroughs possess. No one wanting decorative material in shrubs, foliage, or flowers, for the numerous objects which in a populous place constantly crop up, ever applied to the Red Lodge in vain. To the town parks many trees and shrubs were from time to time presented. The alderman was a prominent supporter and patron of the Southampton Horticultural Society, and that body loses by his death a sincere friend.

Many years ago the Red Lodge Nursery had a formidable rival in that of W. Page & Co., at Hill, and some minor ones also. These being near the town, have long since been covered with streets and houses, but Red Lodge, being more removed from the town, remains undisturbed in its work and its beauty. Long may it be so, and may the present proprietor, Mr. A. C. Rogers, be enabled in years to come to hand it over to his successors still intact.

ARTHUR JENKINSON.—On the 28th ult., the remains of Mr. Arthur Jenkinson, of the firm of Messrs. Jenkinson & Son, seedsmen and florists, Newcasttle-under-Lyme, were consigned to their last resting place with manifestations of respect and regret. His illness had lasted four months, and he died at the early age of 35. The late Mr. Jenkinson's reputation as a floral artist were considered pre-eminent in the county, and he was remarkably successful in his groups, wreaths, and bouquets, at the exhibitions of the Shrewsbury, Wolverhampton, Trentham, and Hanley Park horticultural societies. Lately he had devoted his attention to Orchid growing, and his stock has surprised all Orchid lovers who have inspected it. His removal in the prime of a well-spent life, just as he had established a line of business he had laboured to build, is much to be deplored.

MAJOR GENERAL BERKELEY.—We regret to have to announce the death of this gentleman at Bitterne, near Southampton. The General, who was in his sixty-fifth year, was the son of our old correspondent, the Rev. M. J. Berkeley, whose initials, "M. J. B.," were familiar to all readers of this Journal during a long series of years. General Berkeley served in the Indian Army for many years. On his retirement he devoted himself to the cultivation of Orchids, and was an occasional contributor to the *Gardeners' Chronicle*, to which his father was for so long a period a tower of strength.

Orchid lore, both in its scientific and its horticultural aspect, was greatly advanced by the keen observation of Major-General E. S. Berkeley, whose travels in the native habitats of Orchids, gave him such facilities for conveying the most detailed accounts of them and their surroundings in his pleasant articles on the subject in the columns of the *Gardeners' Chronicle* and other publications. By this means the peculiar requirements of many species deemed difficult to cultivate were explained, as for example his article on *Phalænopsis Lowii*, &c., in our columns February 26, 1887, p. 279.

To his endeavour the re-introduction of many rare species is due, and among the new species discovered and introduced by him for the first time, we call to mind *Phalænopsis tetraspis*, which he found growing on Mangrove-trees in the Andaman Isles, and introduced in 1881; *Phalænopsis speciosa*, and its varieties, discovered in the lesser Islands of the Malay Archi-

pelago also in 1881; *Aërides Emerici*, and its ally *A. lepidum*, from the Andaman Isles in 1882; the pretty *Sarcocylus* (*Thrixspermum*) *Berkeleyi*, *Dendrobium formosum* *Berkeleyi*, *D. polyphelebium* *Berkeleyi*; and on the Great Coco the fine plant which was named by Professor Reichenbach, *Siccolabium* *Berkeleyi*, but which later the discoverer thought might be only a fine form of *Rhynchosstylis reclusa*. About these and many other plants, the clever traveller conveyed useful information in his own pleasant and circumstantial way, and by means of which he will live in the memories of Orchid-lovers so long as the art lasts.

PROFESSOR CARUEL.—We greatly regret to have to announce the death, after a long and painful illness, of this eminent botanist at Florence. Professor Caruel, who was well known in England, became Professor of Botany and Director of the Botanic Garden at Florence on the death of Professor Parlato. Professor Caruel took a leading part in organising the Botanical Congress and International Horticultural Congress held in Florence in May, 1874. He was a prolific writer on subjects connected with the Italian Flora, and continued the detailed *Flora Italiana* of Parlato. He was also the author of an excellent little treatise on Vegetable Morphology. Professor Caruel was an occasional contributor to this journal; and while we grieve over his loss to science, we have reason to mourn him as a friend.

MR. WILLIAM PRAGNELL.—Horticulturists throughout the West of England will regret to hear of the death of Mr. William Pragnell, who was for many years head gardener to Mr. J. K. D. Wingfield Digby, M.P., Sherborne Castle. Mr. Pragnell visited Sherborne during the course of Tuesday morning, 6th inst., and on return to the gardens he was taken suddenly ill and expired almost immediately. The deceased was well known at West of England Horticultural Shows, and his sudden demise will be a shock to his intimate friends, who regarded him as a man of average constitution. The deceased was a Mason, and was a P.M. of Lodge "Benevolence" (Sherborne).

EDINBURGH SEED TRADE.—The fourth annual dinner of the assistants was held on the evening of Friday, the 2nd inst., in the West End Café, Princes Street, when a large company of gentlemen sat down under the presidency of Mr. Peter Drew (Messrs. Peter Lawson's) to a splendid repast. On the removal of the cloth, and after the usual loyal and patriotic toasts had been given and duly honoured, the company was entertained for some hours with vocal music. The toast-list contained several well-known names, amongst those who made capital speeches being Messrs. Methven, Milne, and R. Laird. Mr. Todd, President of the Scottish Horticultural Association, gave some interesting experiences of the seed trade as it was many years ago. The meeting was pronounced to be the most successful yet held.

NOTICES TO CORRESPONDENTS.

A DOZEN PYRETHRUMS FOR CUTTING: *W. W.* *Boule de Neige*, *carneum plenum*, *carminatum plenum*, *candidum plenum*, *floribundum plenum*, *fulgens plenissimum*, *Hermann Steager*, *imbricatum plenum*, *Kleinholz* (single), *Lady Blanche*, *Madame Billard*, and *roseum plenum*. Most of the above have double flowers.

A DOZEN-AND-A-HALF ROCK PLANTS: *W. W.* *Alyssum montanum*, *A. speciosum*, *Androsace chamaejasme*, *A. carnea*, *A. pyrenaica*, *Antennaria dioica rosea*, *Arenaria purpurascens*, *Aubrietia deltoidea grandiflora*, and any other variety; *Campanula caespitosa*, *Phlox Nelsoni* and others; *Dianthus cæsius*, *D. glacialis*, *D. petraeus*, *Gentiana acaulis*, *G. verna*, *Iberis coriæfolia*, *Linaria alpina*, *Lithospermum prostratum*.

ADDRESS: *J. Gay*, 117, Victoria Street, Westminster, S.W.

BOOKS: *H. W. E.* The best book we know of covering all the subjects you mention is Professor F. Oliver's translation of Kerner's *Natural History of Plants*, in two vols. (Blackie & Co.) Of smaller books

dealing with parts of the subject only the number is "legion."

BOOK OF PLANS: *Smilax.* We believe Messrs. Cannell, of Swanley, publish a number of garden plans for designing flower-beds, flower parterres, and carpet-beds. Designs for flower-gardens are to be found in Thomson's *Handbook of the Flower garden*, published by Blackwood & Sons; and Kemp's *How to Lay Out a Garden*, Braibury, Agnew & Co., Ltd., Bouverie Street, Fleet Street, E.C.

BOUVARDIAS: *C. R. T.* The effects may be due to errors in cultivation, or to injurious fumes; but the blooms afford no clue.

CERCIS SILIQUASTRUM: *A Constant Reader.* The best methods of propagation are by seed and layering. The seeds may be sown in October, in pans of loamy soil stood on the ground in a cold pit from which frost is excluded; the latter may take place at any season, selecting a branch or shoot two to four years old situated near the ground. The selected shoot or shoots should be notched over each bud in the old wood, or have a piece of copper wire twisted tightly round and cutting into the rind, and then be sunk in the soil 2 to 3 inches, with the points of the twigs ranging above the soil in a slanting direction, the soil being covered with a layer of old leaves, moss, or Fir-needles. It may take from one to two years for all the seeds to germinate; and layers take the same length of time to form roots.

CHERRY TREE DROPPING ITS FRUITS: *T. C. M.* This is usually due to excessive fruitfulness or to sharp frosts occurring during the flowering of the tree, or soon after setting. There is no cure for the last, but efficient protection by means of coverings of canvas, "Frigi domo," or mats. Excessive setting can be averted by thinning the blossoms, or the quite young fruits; the former by preference. All varieties of Cherries grown out of doors are liable to cast their fruits from these causes. Pains should be taken to ascertain the condition of the soil as regards moisture, especially that of borders made many years, which is liable to become hard and compacted, and as a consequence impervious to moisture; the latter running off into the adjoining cultivated ground. The surface of such borders should be pricked up, and holes made at about a foot apart with a sharp pointed crowbar to the depth of 18 to 24 inches.

CHRYSANTHEMUM: *E. J. S. & Co.* The blooms may very possibly be a sport from *W. H. Lincoln*. You should cultivate a batch of the variety next season, and observe if its habit of growth, &c., is that of *W. H. Lincoln*. Should it prove to be such a sport, a pale blush flowering Lincoln can hardly fail to be valuable, as the type is almost perfect in constitutional characteristics. It would make a nice companion to *Niveum*.

CHRYSANTHEMUMS: *H. Penny.* Consult our advertising columns. You may obtain a good descriptive catalogue from any of the Chrysanthemum specialists. They will also be most likely to name the variety you have sent us; but you should furnish them with several blooms, and these should be of the most typical character possible.

FLIES ON RIPE GRAPES: *Junior Reader.* The flies are *Drosophila melanogaster*. We much doubt wholesome fruit being attacked by these flies. Species of *Drosophila* are common on rotting fungi, and on anything fermenting, collecting round taps of beer-barrels, &c. See *J. Curtis's Farm Insects*. You should cut all these off the bunches, and put them in bottles in a cool, quite dark room. The fruit is very sugary, being dead ripe, and the exuded juice may have attracted the flies. *C. O. W.*

IMPORTED PEONIES AND BULBS: *X. Y. Z.* The bulbs should not be kept out of the soil any longer than may be necessary. *Lilium auratum* or other species should be dusted over with powdered charcoal and sulphur before being potted. The soil may consist of loam two-thirds, peat one-third, no leaf-mould or other decayed substance being used in the soil at this potting, but a considerable portion of coarse sand. The pot should not be less than 8 inches wide for a single bulb, or 10 inches for three bulbs, and the bulbs should be placed about half-way down the pot, and covered about an inch with soil, the final filling up being done when the stems are 2 to 3 feet high. Lilies may be placed in the open against a wall, embedded in tree-leaves, and the pots covered with tiles or slates to exclude mice, snow, and rain, with a slight thickness of

leaves over the slates. The next best method is to place the pots containing the bulbs in cold frames, plunged by preference in leaves, cocoa nut fibre, or coal-ashes; or they may simply be stood on a coal-ash bed. Plunging is the better way, as then the soil is maintained in an uniformly moist condition, without the need of additional water until top-growth has advanced several inches. It is in affording water that injury to the bulbs most frequently occurs. Bulbs having any signs of decay in the scales should be bedded in sharp sand before being covered with soil. The *Pæonies* should be planted in large pots about half-way down, and the pots filled up forthwith with soil made quite firm about the roots. These may be treated similarly to the Lilies, and out-of-doors treatment is the most suitable. In your garden, at the sea-side, it would be quite safe to plant them in well-manured trenched soil, at 3 feet or further apart, and 9 inches deep. Both Lilies and *Pæonies* dislike a loose soil or a very light one, although there are exceptions; *Lilium auratum* succeeding for at least some years in peat and manure; but loose soils do not tend to longevity or much natural increase by offsets.

MADRESFIELD COURT VINE: *W. W.* Let the Vine be cut-back now, or before the end of January—the sooner the better.

NAMES OF FRUITS.—Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

—*D. J. H.* 1, *Beurré Bosc*; 2, *Glout Morceau*; 3, *Winter Crassane*; 4, *Glout Morceau*; 5, *Bergamotte d'Esperen*; 6, *Marie Louise d'Uccle*.—*J. S.* Golden Noble.—*A. Wade.* Winter Queen.—*J. L. L. Adams'* Pearmain.—*D. F.* We cannot name your Apple from the specimen sent. It is not unlike *Forge*, common in Sussex.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Mrs. B.* *Spiraea aræfolia*.—*J. W. McH.* *Polygala chamaebuxus*, native of Switzerland.—*A. F.* 1, *Platone lagenaria*; 2, *Maxillaria picta*; 3, *Cypripedium Chantini*; 4, a form of *Cypripedium Ashburtoniæ*; 5, *C. Sedeni*.—*J. M., Nottingham.* 1, *Carex japonica variegata*; 2, *Eranthemum atro-purpureum*; 3, specimen not sufficient; 4, *Blechnum occidentale*; 5, *Acorus gramineus variegatus*; 6, *Polypodium pustulatum*.—*Arum.* 1, *Thuya occidentalis var. plicata*; 2, *Asplenium trichomanes*; 3, *Cupressus Lawsoniana*; 4, probably *Cedrus Deodara*; 5, *Cupressus Lawsoniana*; 6, *Thuya orientalis var.*; 7, *Thuya dolabrata*; 8, *Thuya gigantea*; 9, *Todea superba*.

PERSIMMONS: *D. James.* See note in present issue, p. 421. If grown out-of-doors, it should be in some warm part of the garden, or against or in front of a south wall, and in such soil as would suit the Peach. The plant might succeed under the same kind of treatment as the Orange, or *Cattley's Guava*, *Psidium Cattleyanum*.

RHODODENDRON GRAFTING: *W. v. S.* See p. 425, in present issue.

SYCAMORE: *X. Y. Z.* The correct scientific name of the common Sycamore is *Acer pseudo-platanus*.

VINES DYING AT THE ROOT: *J. L.* Nothing could be more unnatural or injurious to Vines than to cover the border with a 6-inch layer of cowdung every year, shutting out air and warmth from the soil, in fact causing the death of the roots from suffocation. If the border consists of heavy tenacious loam, the conditions are further aggravated. You will be right in lessening the depth of the border by adding 1 foot of hard materials at the bottom, for doubtless it is most inefficiently drained if the soil goes right to the concreted bottom. Replant the Vines now, bringing the roots near the surface and adding the ingredients mentioned in your accompanying note, not making a too free use of Thomson's manure, or indeed any kind of manure. If the Vines need stimulus, afford manure water. The chief points are warmth, a free soil, moisture, good drainage, and manurial aids when they are needed.

COMMUNICATIONS RECEIVED.—*A. D.*—*J. H. W.*—Professor Henriques.—*G. M.*—*D. McD.*—Florence.—*H. R. H.*—*C. N.*—Antibes.—*R. H. Q.*—*W. G. S.*, Leeds.—*Wild Rose*.—*G. E. P.*—*H. D.*—*C. H.*—*E. J.*—*Goodacre*.—*H. T. M.*—*S. J.*—*J. Lowrie*.—*A. D.*—*H. R.*—*Expert*.—*G. H.*—*A. Menissier*.—*A. C.*—*A. D. A.*—*G. M.*—*Wrest Park*.—*E. H. C.*—*A. Hope*.—*Jno. Checkley*.



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 17, 1898.

BRYANSTONE HOUSE.

JUST outside the town of Blandford is a bridge that spans the River Stour, and the visitor cannot do better than pause for a brief space and look up the stream for a peep of the fine mansion of Bryanstone House, which from this point appears completely to nestle among the verdure of woods and trees. A glimpse is also obtained from this point of a new church built by Lord Portman, the owner of Bryanstone, and of many another house in place of an inadequate old structure. This is the modern equivalent, it would seem, of endowing a chapel, a monastery, or the like, by the barons of old.

On entering the approach by the lodge, the visitor, if he be a tree-lover, will be impressed by the large size of the overarching Beeches, Elms, Oaks, and many immense specimens of the common Yew that stand between and beneath them, many of them measuring from 30 to 40 feet in height and diameter. Though the soil is shallow, and the underlying stratum mostly chalk, trees grow here to remarkably large proportions.

The approach road is exactly a mile in length measured from the Blandford side, and the distance from the approach on the opposite side is the same. The mansion was completed about five years ago, after several years had been spent in its erection. It stands on high ground, involving an immense expenditure in the alteration of the old, and formation of new pleasure-grounds and shrubberies. The groundwork at this part of the place must have been very heavy, some parts having been raised 4, 6, and even 10 feet above the old levels. So skilfully, however, has this part of the work been carried out by Mr. Allsop, and the planting performed with such judgment that only a very critical observer could tell the new work from that previously existing.

The views from the house and its vicinity are very fine, and include extensive stretches of the county; and then the view of the house itself from the garden front, together with the broad steps and terraced green banks, and smooth lawns that surround it, impart a height and grandeur to the building that is more impressive than when looking at it from the higher terrace. This broad terrace is 125 yards long, and 100 feet in width.

Immediately in front of the two wings of the mansion are the flower-gardens, the beds cut in the soft elastic turf so indicative of ages of careful tending on the part of many generations of head-gardeners. The design of each garden is different, but the effect is quite harmonious. The beds are filled, it is almost

needless to say, with a very select lot of the best kinds of bedding-plants; and as becomes a flower-garden so near the dwelling, the general effect was good though brilliant.

The building of the church, following so closely upon that of the mansion, the removal of foundations and the formation of new roads, borders and lawns, and planting of shrubberies involved, as I have said, much labour. The heaviest part of the work, however, has now been accomplished, and there only remains some planting that will be finished this winter. The gardener's house is conveniently situated close to the glasshouses. The stove happened to be the first house entered, and immediately in front of us were some large specimens of *Begonia corallina*, trained on the roof, an interesting plant for such a position, which always has a pleasant appearance; moreover, its flowers are useful when cut for filling vases, for dinner-table decoration, &c. This is a plant which I can unreservedly recommend to those who have space at command, and if grown as standards it is a suitable plant for house and corridor decoration. *Begonia Madame Carnot* is similar, but the flowers are a little larger than those of *B. corallina*. In this stove were numbers of *Calanthe Veitchi*, with fine, well-grown pseudo-bulbs. Few plants are of greater value for autumn and winter decoration than *Calanthes*, and the number of varieties is now considerable. As Orchids for smoky towns, they are not desirable, the blossom falling a prey to winter fog and lack of sunshine; but out here in the pure air, as at Bryanstone, nothing could be nicer. An adjoining house contained Palms of considerable size for house decoration, a number of Ferns, and overhead large masses of *Stephanotis floribunda* and *Bougainvillea glabra* in flower at that time. Those highly-valued and odorous additions to our winter plants, the *Freessias*, are grown in large quantities, and the first bulbs were being potted on the day of my visit.

The Carnation mania in strong form has reached Bryanstone, and drawing my conclusions from what I saw, the *Souvenir de la Malmaison* seemed to be the favourite variety, though many others are under cultivation. Some 2000 in all are cultivated in pots. Uriah Pike was represented by a large number of plants that were already potted for winter display, and then to follow Uriah is Mrs. Leopold de Rothschild. One that is greatly valued as a variety for filling beds and planting in borders is *C. Duchess of Fife*, known also as *C. Maggie Laurie*, a wonderfully free flowerer, with blooms of a rosy-pink colour.

A show-house was gay with a galaxy of beautiful *Gloxinias*, healthy Ferns and Palms, and nice compact plants of *Plumbago rosea*, Sander's variety of *Bougainvillea glabra* in 6-inch pots. With these were large plants of the Veitchian strain of *Streptocarpus*, which has grand clusters of flowers; and several varieties of Ivy-leaved *Pelargoniums* trained over the back wall, plants of *Asparagus plumosus* being intermixed, forming a pleasing whole. In frames were remarked large plants of *Carnations Souvenir de la Malmaison*, which, being turned out of their pots, and laid on their sides, had been layered from every shoot. The protection of frames is liked because in rainy weather the lights can be drawn on, and the plants kept dry. By the side of these were frames filled with seedling *Streptocarpus*, and as these plants flower, the most desirable are marked, taken up, and potted. Planting-out is a more desirable method than potting, the plants

growing more freely, owing to the uniform moisture and temperature of the soil. *Begonia Gloire de Lorraine* had a house entirely to itself, and with excellent results. The plants were not in flower when I saw them.

The vineries are full of interest to the Grape-grower, many of the canes being inarched with varieties which Mr. Allsop feels sure will produce finer fruit than the old canes have borne latterly. *Gros Colman*, for instance, was worked on Black Hamburg four years ago, with the result that a strong cane is now bearing a good crop of fruit, the berries being larger, and colour better than when grown on its own roots. The Muscat-house contained many very fine bunches in an unripe state, but giving one the idea that they would finish of that rich amber colour that delights the eye of the connoisseur, professional or amateur, which is so difficult of attainment. *Madresfield Court*, *Black Hamburg*, *Gros Colman*, *Lady Downes*, *Black Alicante*, and *Gros Maroc*, which were noted in other vineries, were in excellent condition, and as has already been stated, Vine-inarching has been carried on with many, and capital young rods now reach well across the entire width of the houses. Mr. Allsop prefers to plant young Vines in the autumn, for he considers if some roots are made soon after planting, then the canes the season following come away much stronger than if planting takes place, say, in the month of March or April.

Tomatos are here almost all grown in pots, and these are placed in every spot where space can be found for them. The earliest plants to fruit had done very well, I was told, and still there were many fruits to be found on them. A lot of succession plants promised well, and one cannot but hope that the promise came to fruition in an autumn not rich in fulfilment. There is this to be said as a set-off to the much watering and other labours, that a potted Tomato can be brought indoors to ripen its fruits when the weather gives the cultivator hints that further hope of progress out-of-doors is vain. As varieties *Glenhurst Favourite*, and *The Cropper* are those mostly grown.

There are large numbers of *Roses* grown in pots for indoor decoration. *H. P.* and *Teas* are about equally represented, the freest bloomers and finest flowers being the favourites. At the time of my visit these *Roses* were snugly sunk to the rims of the pots in coal-ashes. *Cyclamens* are planted outside in a shady border, in leaf-soil, and when these plants break sufficiently strong, they are potted and stood in frames, bringing fine batches of bloom.

Chrysanthemums in large numbers are well grown, specimen blooms being those chiefly in request, although, as bushes for affording smaller blossoms, they find considerable employment. Some plants struck from cuttings taken in the month of March and April were remarked in 6-inch pots, and these are allowed to carry one good bloom each, and being dwarf they are useful in house decorations.

The kitchen-garden if left to the last, is by no means the least important, for everything grown receives the best of treatment. The drought had punished the Pea-crop; this, however, was a common experience last summer and autumn. Young Apples, mostly standards and bushes, were noticed with fine crops of good fruit upon them. Peach and Nectarine trees appeared in a very flourishing condition, and abundantly cropped.

Bryanstone is a model estate, with a model

garden managed by a skilful gardener, who not only cultivates plants under glass and out-of-doors in a very creditable manner, but who has an artist's feeling in all matters pertaining to landscape gardening. *Our Special Correspondent.*

THE FERTILITY OF THE SOIL.

As horticulture can only be successfully practised upon a fertile soil, it is evident that the maintenance of the fertility of the soil we cultivate is one of the most important of all economic problems. That the soil may be speedily reduced in plant-food under an improvident system of horticulture, and that the original fertility of a once fertile soil may be restored, although sometimes slowly and laboriously, are matters of common observation.

The point at issue is to learn to what extent we may call to our aid the discoveries of modern science in reducing the cost of, and making more effective the empirical methods of our forefathers, or whether we may substitute for these methods others far more effective.

While we have been disappointed in the expectation raised by the discoveries of the earlier chemists that chemical analysis was to be the X-ray, which should reveal clearly and definitely the plant-producing capacity of a given soil, and the food requirements of a given plant, yet it must be conceded that chemistry has done much for us in both these directions, and as we learn to read the revelations of chemistry by the assisting lights of geology and biology, we are slowly and laboriously, but surely, working out the problem of plant nutrition, and it now seems safe to formulate a few general principles as being sufficiently established to justify building upon them a scheme of horticultural management:—

1. The carbon of green-leaved plants is absorbed directly and practically exclusively from the atmosphere, through the medium of the foliage. At least, the soil supply of carbon is a matter of minor importance.

2. The oxygen of such plants is chiefly absorbed in the same manner by the foliage, or taken up by the roots in combination with hydrogen in the form of water; although a minor and comparatively unimportant source of oxygen and hydrogen may be found in the breaking up of nitrates and ammonia by nitrification.

3. The nitrogen of such plants is obtained invariably from the soil either directly from compounds of nitrogen with oxygen, hydrogen, or mineral or organic compounds—such as nitric acid, ammonia, nitrates and humus; or indirectly through symbiotic growth of micro-organisms living in the soil, which have the power of assimilating the free nitrogen of the atmosphere; this symbiotic growth being apparently confined almost altogether to leguminous plants.

4. The mineral constituents of such plants are taken directly from the soil, being absorbed by the roots in the form of solution in water.

5. The ten or more mineral elements found in the ashes of plants are furnished in abundance by practically all fertile soils, provided there be present a sufficient quantity of available phosphoric acid and potash, and sometimes also of lime.

6. The various elementary substances found in plants are combined with each other in certain definite proportions, varying for different species, but held within very narrow limits for each species; and the growth of the plant is measured and limited by the least amount of the various elements required for their growth.

Reducing these principles to the lowest terms, and stating them in general form, we may say that the plant will secure a full supply of carbon provided other nutrients are furnished; that the supply of oxygen and hydrogen is chiefly dependent upon the water supply; that the supply of nitrogen may be regulated by the use of mineral nitrates or ammonia-salts, or the setting up in the soil of those conditions which favour the growth of nitrogen-working micro-organisms; and that having provided

a full nitrogen supply, we may control the growth of the plants by giving or withholding phosphoric acid and potash.

7. The water-supply of plants is a matter of supreme importance, for not only does water comprise three-fourths or more of the actual weight of cultivated plants when growing, but it is the vehicle in which all the mineral and nitrogenous constituents of plant-food are carried to their destination. In performance of this function it is constantly passing through the plant, being absorbed by the roots and transpired by the foliage; it being estimated that more than 300 pounds of water must pass through the tissues for the deposition of a single pound of dry substance in the plant, and thus the question of the maintenance of the water-supply becomes one which cannot be neglected in the garden.

The nitrogen supply takes rank next to water in importance, for it is the ingredient which may be most quickly exhausted by an improvident system of horticulture, and which is the most expensive to replace by artificial methods.

When it is considered that the plant-food in the

we may not hope to be able to modify existing systems, and obtain the object in view more quickly and efficiently. *J. J. Willis, Harpenden.*

(To be continued.)

NEOBENTHAMIA GRACILIS.

IN our issue for September 5, 1891, a description of this rare plant from the pen of Mr. R. A. Rolfe, of the Royal Gardens, Kew, together with an illustration showing the habit of the plant, and the flowers and their component parts of natural size, are given, and now re-produced. *Neobenthamia gracilis* belongs to the tribe Vandeeæ, as it possesses a distinct stipe and gland to the pollinia, and to the sub-tribe Cymbidiæ, as the lip is adnate to the column, and without a spur. We are now enabled, by the kindness of Mr. F. W. Moore, of the Glasnevin Botanic Garden, to exhibit a fully developed head of flowers. He mentions the fact that his plant is stouter and more erect than our earlier figure, and than the figure in the *Botanical Magazine*, vol. 58, series iii., plate 7221, showed, and our artist has rather unduly emphasised this feature of the inflorescence.

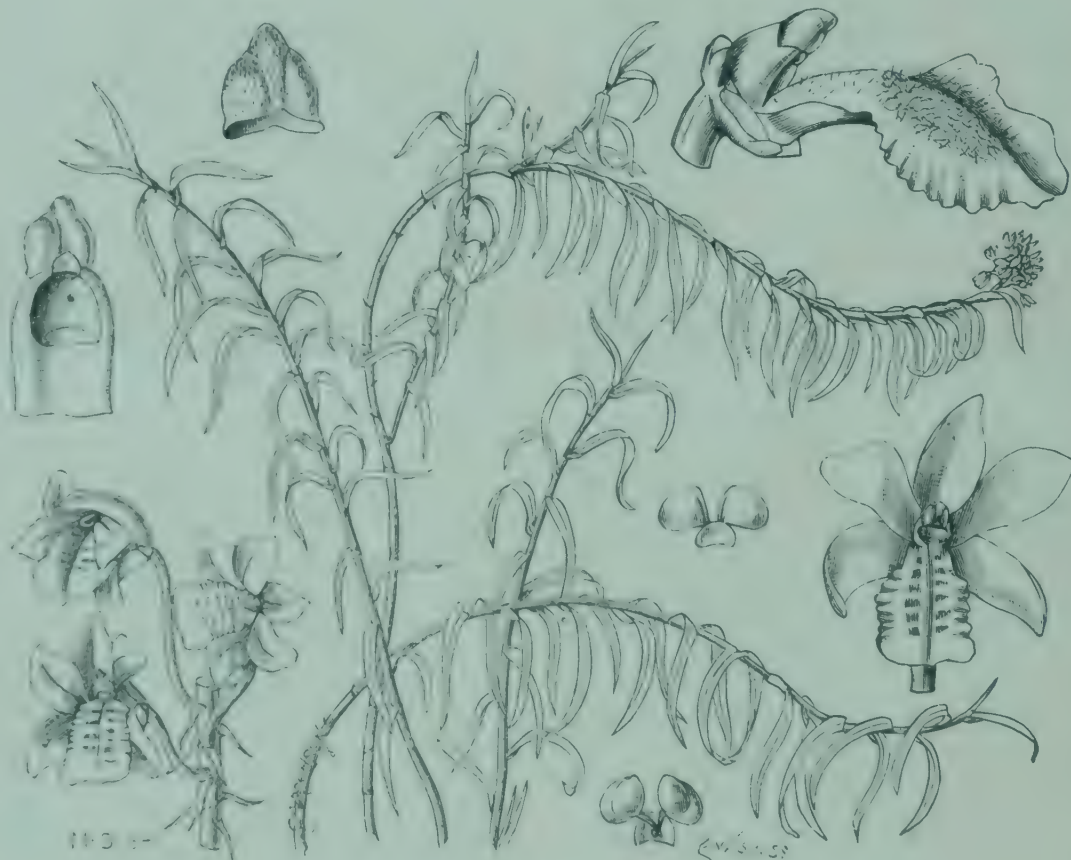


FIG. 124.—NEOBENTHAMIA GRACILIS: SHOWING HABIT AND FLORAL DETAILS.

soil must be of very slow solubility, in order that it may not at once be washed away by heavy rains and artificial waterings, and when we reflect upon the observed fact that when we apply certain forms of soluble plant-food, such as superphosphate for instance, a large portion of it is immediately converted into an insoluble or very slowly soluble condition by reactions within the soil, it is absurd to expect to realize in the growth of a single season, or even in that of many seasons, the entire quantity of plant-food applied in manure.

But accepting the fact which seems to be demonstrated beyond question, that the entire amount of plant-food applied in a fertiliser will not be returned in one crop, the question arises, especially in view of the light which recent discoveries have thrown upon the methods by which the inert nitrogen of the soil is converted into assimilable form through the agency of nitrifying organisms, and upon the still more interesting problem of the assimilation of free nitrogen through the agency of symbiotic growth, whether

SELAGINELLAS.

WELL-GROWN Selaginellas constitute one of the chief attractions of the tropical fernery, and are in every way worthy of extended cultivation. Although they are a stage or two removed from Ferns in the scientific classification of plant-life—the larger-growing species, those with a distinct upright leaf-stalk, excel many Ferns in wealth of foliage and decorative effect. Many of the species may be cultivated in the temperate fernery with some success, but the plants do not make the luxuriant growth they would do in a temperature of 65° as a minimum. The treatment they succeed under is very similar to that required by Ferns—they are propagated by the same methods; those that produce rhizomes, by division of the rhizome; those that are of tufted growth, by division of the tufts; in all cases by raising from spores.

The divisions of the rhizome may be started into growth in a propagating-case with a slight bottom

heat, containing a moist atmosphere, affording a temperature of 70° till they become established; the divisions of tufted plants which do not produce rhizomes may be treated in the same manner. An

portions, passing all through a coarse sieve, adding a liberal quantity of coarse silver-sand to keep the soil open. The pots or pans must be well drained, as the plants require abundance of water for the greater

lapping scales forming the quadrangular extremities of the divisions of mature fronds, are ready to collect when the scales open somewhat; they should be sown as soon as gathered. As many 6-inch pots as are required should be half-filled with drainage; over this should be placed some rough fibre, and the pot filled to within an inch of the top with sterilised sandy loam, pressing this firmly, and watering slightly to fill up crevices in the soil. The pots must be covered over after sowing with a separate piece of clean glass, and placed in pans containing an inch of water; a temperature of about 65° should be maintained, with abundant atmospheric moisture, and careful shading. The seedlings should be pricked off as soon as large enough to handle, using a compost similar to that advised for propagating by division.

Among the best Selaginellas, the following are worthy of commendation:—

S. caulescens.—The fronds of this species attain a height of 2 feet; they are somewhat thin and slender, and of straggling habit. The variety *amena* has smaller fronds than the type, of various shades of green, and from its compactness is useful for pot-culture. Both are useful as cut fronds for spray and bouquet-making. These and *S. Wildenovii* are practically the only three large-growing Selaginellas which will keep fresh in a cut state for many hours. A pretty tufted plant is *S. emiliana*; the fronds are about 9 inches high, elegantly divided, and of a pleasing light green colour—it makes a nice single specimen in a small pot.

S. erythropus produces a finely divided frond, of wiry appearance; it is fairly robust, growing to the height of a foot or more. This also makes an elegant pot-plant. The var. *minor* differs in being smaller. *S. erythropus setosa* being smaller still.

S. flabellata resembles *S. emiliana*, but is of a little coarser growth; this species frequently shows beautiful autumn tints on the mature fronds.

S. grandis makes handsome fronds, measuring 2 feet in height, of a dark shining green colour; the lateral divisions are half-an-inch broad, and are closely arranged; in some instances the fronds incline to be spiral. It is a very dense-growing plant, requiring plenty of root-run, and liberal treatment. It needs a case to do well, or a position in the house free from fluctuations of temperature and atmospheric moisture.

S. hæmatodes may be regarded as the best of all Selaginellas. It produces flat, handsome fronds up to a foot across, of a deep shining green colour. It has a very rich appearance, the divisions of the fronds overlapping each other. It succeeds also in the temperate Fernery.

S. inæqualifolia and *S. Galeotti* are both of straggling habit, thin in the frond, and of little value as decorative plants compared with many others.

S. Martensii and var. *stolonifera* are plants of rambling growth, producing thin fronds, averaging 9 inches in height, the lateral divisions being a quarter of an inch broad. The var. *variegata* has white tips, the type being the most handsome of the three. These succeed also in the temperate Fernery.

S. molliceps is of small growth; it produces elegantly-divided fronds, somewhat cristate in character, of a light green colour, the extremities being tipped with gold; it is of dense growth, reaching a height of about 6 inches.

S. plumosa has a large frond of good substance, dark-green in colour with pendent tips; it attains a height of 1 foot, and is in every way a desirable species.

S. stenophylla produces a tuft of small fronds of mossy character, seen to good effect in large pans.

S. viticulosa has small fronds with drooping lateral divisions, of elegant and pleasing habit; it is of dense growth, and requires to be grown in pans well filled to be effective.

S. Vogeli is a very handsome plant, of the hæmatodes type, producing fronds which attain a height of 2 or 3 feet; the fronds are not so dense as those of *S. hæmatodes*, but are much taller. It is of robust grow, requiring plenty of root-run.



FIG. 125.—NEOBENTHAMIA GRACILIS. (SEE P. 430.)

Taken from a plant grown at Glasnevin Botanic Garden.

open compost is necessary to start them in, two-thirds sifted peat, and one-third leaf-mould and silver-sand mixed, will be found suitable for them. A heavier compost is required for established plants, consisting of peat, rough leaf-mould, and fibrous loam, in equal

part of the year. The colour of the fronds is enriched by damping-down the floors of the house daily with weak solutions of soot and lime-water. The spores, which are contained in the spore-cases or sporangia, found under the minute over-

One of the best for decorative purposes, *S. Wallichii*, produces light-green erect fronds, 2 and 3 feet in height, the lateral divisions of which are widely separated; these divisions are densely clothed with the scale-like pinnæ. It is a very handsome species, of robust growth.

S. Willdenovi is the scandent species common in gardens; it succeeds best in the stove-house, with plenty of root-run and liberal treatment, the growths attaining a length of from 10 to 20 feet, the broad, blue-tinted fronds occurring at intervals on the stem. It is frequently cultivated in pots for cutting, in cool-houses, but grown in this manner the plants show but little of the graceful effect they are capable of producing, depending from the rafters of the stove-house.

The small-growing mossy species are suitable for covering bases of Ferns, and for fernery rockwork the most interesting of them are *S. uncinata*, with blue-tinted growths, trailing along the ground; and *S. serpens*, a green species of similar habit.

Selaginellas thrive best on the shady side of the house, with abundance of water whilst in rapid growth, avoiding stagnation at any time; they will require less during the winter months, but must not be allowed to become dry. *Geo. B. Mallet.*

THE HARDY HEATHS.

THE hardy species of *Erica* are not only some of the most beautiful of evergreens, but their peculiar type of foliage, and their tiny, nodding, mostly bell-shaped, flowers, make them also some of the most distinct. In gardens where they can be successfully grown—and it is only where the soil is strongly impregnated with lime that they cannot—they ought to be indispensable. Several of the most useful of them, in fact, nearly half of the species that can be grown outside, are natives of our own heaths and mountains. The others have come from the continent of Europe; some of them from the south and south-west are only sufficiently hardy to be seen at their best in the milder parts of the British Isles. A few of the south European species are almost tree-like, attaining a stature of almost as many feet as some of our native species do inches, and where they succeed, as they do, for instance, in the Isle of Wight or in Cornwall, they rank amongst the loveliest and most charming of all shrubs. There are few that remain in bloom so long as these hardy Heaths, and although they are not very numerous, there is not a month of the year, except it be November, which one or the other of them does not help to brighten by its blossoms. Of the true species there are only twelve or thirteen, to which have to be added three or four natural hybrids, and several varieties mostly differing in colour only. They constitute, therefore, a small, compact group which can conveniently be grown in its entirety in even small gardens where the conditions are suitable. Fortunately they are not, like so many shrubs, sold under a number of confusing aliases. Of those mentioned in the following list only two, I believe (*carnea* and *lusitanica*), are commonly known by any other name than the one here adopted.

As the planting season is now here, it may possibly be of some use to bring the entire group before the readers of this journal, and to briefly set down the history and leading characteristics of each species and hybrid. So far as I am aware, the following list includes all that have been successfully and permanently grown out-of-doors in the British Isles:—

SPECIES.

<i>arborea</i>	<i>mediterranea</i>
<i>australis</i>	<i>multiflora</i>
<i>carnea</i> (syn. <i>herbacea</i>)	<i>scoparia</i>
<i>ciliaris</i>	<i>stricta</i>
<i>cinerea</i>	<i>Tetralix</i>
<i>lusitanica</i> (syn. <i>codonodes</i>)	<i>vagans</i>
<i>Mackai</i> (? var. of <i>Tetralix</i>)	

PROBABLE NATURAL HYBRIDS.

<i>Maweana</i>	<i>mediterranea</i> hybrida
<i>Watsoni</i>	(syn. <i>E. hybrida</i>).

These Heaths will thrive in any good moist soil that is free from calcareous matter. A good pro-

portion of leaf-soil should be added; peat, too, if available, and sand, if the ground be heavy and close.

E. arborea.—In the Isle of Wight and the milder parts of the south coast this is, perhaps, the most magnificent of all the Heaths, being really a small tree. Near Ventnor there is (or was, a few years ago) a specimen over 20 feet high, whose stem had a girth of 29 inches. About London, it can scarcely be called absolutely hardy, for it succumbs to our hardest winters. It is a native of the Mediterranean region, abounding along the coast from Marseilles to Genoa. It is found also in the Caucasus. A noteworthy character of the plant is the dense covering of hairs on the younger wood. The leaves are closely packed in whorls of three, and the branches have the same arrangement. It flowers most profusely from March to June in the leaf-axils of the short twigs that spring from the previous season's shoots, so that each of these shoots forms a great tapering panicle, varying from 6 inches to 18 inches long. The flowers are almost globular, and nearly white; they are not large, but appear in such profusion as to make this Heath one of the most showy of the taller species. The wood is used in the south of France in turnery work, and it is from it that the so-called Briar-root pipes are made—really a corruption of the French "*Bruyère*."

E. australis.—Like the preceding species, this is one of the taller Heaths, and although it does not get to be so big as *E. arborea* does, it reaches 6 feet or 8 feet in height. Unfortunately, it is one of the more tender sorts. It is of upright habit, and bears its leaves in whorls of four; they are cylindrical, except for the furrow on the under surface. The young wood is covered with a tomentum, but is not so distinctly hairy as the preceding species. The flowers are sweet-scented, rather cylindrical or pitcher-shaped, about a quarter-of-an-inch long, and of a reddish-purple; they are borne in terminal clusters, generally consisting of about four flowers. The species was introduced in 1763 by the Earl of Coventry. It is a native of Spain and Portugal, often growing wild on sandy hills and wastes. In this country it flowers in April, and continues in bloom for two or three months. The quadruple arrangement of the leaves and twigs, and the terminal clusters of flowers, amply distinguish it from *E. arborea*.

E. carnea.—Of the dwarf Heaths, this species is, I think, the most useful, and it is not far short of being the most attractive. With the exception of the hybrid between it and *E. mediterranea*, it is the earliest to flower, it is of perfect hardiness, and blooms not only with remarkable freedom, but over a period of three or four months, uninfluenced by snow, frost, or rain. It is of singularly neat and dainty habit, and as a rock-plant, as a carpeting beneath taller shrubs, or as an edging, it is equally admirable. Its foliage is of a very rich dark green (the leaves in whorls of three or four), against which the bright rosy-red of the flowers begins to show charmingly soon after the New Year. They appear towards the ends of the shoots, mostly in pairs, from each leaf-axil, the whole forming a cylindrical raceme, 1 inch to 2 inches long. Little need be said to recommend this plant; it has long been in cultivation, and is well known in gardens. It is figured in the early pages of the *Botanical Magazine* (plate 11), and is there stated to have been introduced from Germany in 1763 "by the late excellent Earl of Coventry." We are informed that "it was not much known till 1785, or thereabouts, when it was freely imported from Holland, and was hence long known as the Dutch Heath." It is a native of the mountainous parts of Central Europe. The variety *alba* differs only in its white flowers; it is an admirable companion-plant to the above. *W. J. Bean, Arboretum, Kew.*

(To be continued.)

CYANIDE OF POTASSIUM AS AN INSECTICIDE.

[POISON!]

It may interest your readers to have the results of what is probably the first attempt at the use of cyanide-fumes in greenhouses, for the destruction of insects in this colony, New South Wales.

Like all the growers of Orchids in the colony, I have been troubled with pests of various kinds, including thrip, red-spider, brown-scale, seed-scale, mealy-bug, ants (generally a sequel to scale and aphids), and probably what is the most troublesome of all, Orchid-weevil.

The first experiment was tried in what we know as the "Lily-house," which is 14 feet by 20 feet, 5 feet to the eaves, and 5 feet 6 inches from eaves to apex. Making allowance for the solid contents, as the Lily-tank, &c., according to the instructions in the *Gardeners' Chronicle* of July 16 last, I estimated that I would have to use 21 ozs. of cyanide of potassium, the same quantity of strong sulphuric acid, the latter being diluted with 14 ozs. of hot-water. Everything was divided into two portions. The cyanide was tied in bags, and swung so that it would drop immediately into the jars when desired, strings being carried to the outside. The hot-water was placed in the jars, which should be large for the purpose, and of course, capable of standing boiling water suddenly poured into it. The acid was poured slowly into the water. An ordinary wine or beer bottle is very convenient for the purpose, as the operator should not be too close to it. The acid will make the water boil at first, and probably sparkle up and burn severely. The house had previously been very closely shut up, except two ventilators, through which the strings were passed. The jars with the acid were placed immediately under the parcels containing the cyanide, and the gardener after closing the door, passed round, let go the strings, which allowed the cyanide to drop into the acid, and instantly shut the ventilators. An interval of 25 minutes was allowed to elapse, when one or two of the low ventilators near the ground were opened; then the door was pushed open (the wind was blowing in at the door), and the house fairly well cleared of gas before venturing in to open the top ventilators to leeward. This part was done very quickly as the fumes were still perceptible in the house.

Half-an-hour afterwards an examination was made. The fumes were slightly perceptible, and remained so for at least 24 hours. It was found that the quantity of cyanide used had been too much, and that half the quantity would have been sufficient. The quality of the cyanide was of the highest commercial grade, and fully 90 per cent. The material had boiled, there being a great deal of black froth, so the precaution to use relatively large vessels had been a wise one. I would not advise for such quantities as I used less than gallon jars.

The next day, on critical examination, it was found that everything in the way of insects visible had been killed. Frogs were dead. I was afraid I should lose my fish in the tank, but fortunately only two of these were found to be dead, doubtless having come to the surface. It destroyed all the ants, which are proverbially difficult insects to kill; and on searching for weevils, none could be discovered on the plants, though on the previous day about half-a-dozen had been found on similar ones. It is supposed that they had fallen down into the moss, where it would be difficult to find them. The gardeners and myself considered it was a grand success, and better than XL-All tobacco solution, which will destroy most insects, including thrip and red-spider, but which we have not found successful in destroying scale, ants and weevils.

A similar fumigation of a second house proved to be equally effective, except that it did not kill some large green frogs. It killed small ones; but the large ones, though not actually killed, were so sick even next day, that it seemed doubtful whether they would recover. It should also be said that the cyanide was on this occasion what was left from the previous attempt, and reduced to about half the quantity. Had fresh cyanide been used, I have little doubt but that the large green frogs would have succumbed. A few ants also were found alive next day; it is just possible, however, that these may have come from the outside.

It is a necessary condition that the foliage of the plants should be dry, and the utmost care should be exercised that the wind is blowing away from the

private residence, and that no persons be near the house being experimented upon at the time, especially on the lee side; also that all vessels that the cyanide has touched be carefully washed and the water thrown down the sewer or buried in a hole.

Employers attempting the operation should see to it the first time personally, so as to get the *employés* into a right way of going about it. *It is too dangerous to run any risk with.*

I should have said that on the second attempt a plant with mealy-bug on it had that insect killed. This was about the only insect we had not tested in the first experiment.

I am very doubtful whether it will destroy the eggs of insects. I intend to see how long it is before scale, thrip, and red-spider show themselves again, though, of course, they may be carried in by exchange of plants from one house to another. Subject to proper care being taken, I consider the above method effective beyond anything else I know of.

Since the above was written we have tried a third house. This was on the morning of the Eight-hour Day, on which it rained for a considerable period. The house had previously been damped down, so that it was charged with moisture which the rain outside did not permit to dry off as freely as usual. The foliage of the plants did not appear to us to be damp, but there must nevertheless have been a sufficient clamminess about it to permit the cyanide fumes to act on the foliage, to which serious mischief was done, though strangely enough it did not affect the few Orchid-flowers that were in the house. The lesson then learned is, that the house must be dry. I have also come to the conclusion that the acid which I used was too strong, and that it might be reduced in quantity, and water added to make up the difference. My reason for coming to this conclusion is, that the acid appeared to me to be strong enough, even though water had been added to it, to char the cyanide. I note also that in the original directions, when it is recommended to add the sulphuric acid to the water, it assumes that the acid is sometimes not strong enough to make the water boil. Whereas in this case, the first addition of the acid to the water made it boil freely, but on further adding the acid the mixture ceased boiling, so that it did not require additional acid as they suggest, but rather the addition of water. With regard, therefore, to both the cyanide and the acid, the material which I used must have been superior to that used in the American experiment, of which the article is so succinct. I am perfectly satisfied that for anyone obtaining the same grade of articles as I used, one grain of cyanide for every cubic foot of the house, is sufficient, and an equal quantity of sulphuric acid diluted with the same quantity of water.

I may mention that the first and second houses experimented upon were practically East India temperature-houses, and the third an intermediate temperature-house, containing Cattleyas, Lælias, Cypripediums, Oncidium, Cologynas, &c., all of which were more or less affected, but especially plants with plicate foliage. *Hugh Dixon.*

SURREY COUNTY GARDENING SCHOOLS.

THE report of the Surrey County Council's Technical Education Committee, upon the gardening work at the evening continuation classes, has just been presented. It states that in comparison to previous years the progress has been excellent, and the crops of hay, Potatoes, Peas, Beans, Cabbages, winter Onions, and Lettuces, on the whole, have never been so good since 1894. The dry weather which commenced in July caused much failure of winter greens and Cauli-flowers, but Kidney Beans were generally good. The root-crops, Potatoes in the end, were above the average, and Beet, Parsnips, and Onions were above the average in most gardens; but Turnips were below average merit in most centres, and Carrots were weaker than usual. Celery was creditable in many gardens, also Tomatoes, Vegetable-Marrows, and Leeks. Red Cabbage in some centres was fine, and flowers were in many instances charming. West

Farnham centre, with twelve gardens, scored 104 marks, the greatest average ever yet recorded, and so headed the list; and Chas. Orford became county leader, with the unprecedented number of 111 marks. To such an extent have averages been raised that no fewer than 176 competitors last year gained higher marks than the county premier of 1894, Geo. Budd, who only scored 75 points. The number of centres is now 30, and the garden-plots 373, and in each case there was an increase on the previous year. During the year classes had been formed for instruction in cultivation under-glass, and by the kindness of the Bishop of Winchester and Mr. S. Bide the glass structures at Farnham Castle and Alma Nursery have respectively been thrown open to the students. Mr. C. A. Pearson also allowed the classes, which numbered some 63 students, to inspect his glass-houses at Frensham.

The report upon the cottage-garden and allotment section states that 520 gardens and allotments had to be inspected, a great increase on former years. Notwithstanding prolonged cold spring, and subsequent drought and heat, the crops on the whole have been good. Sixty Certificates of Merit were awarded. The highest point in gardens was that of Mr. W. Wellman, of Banstead, who received 155 marks, and the highest allotment was that of Mr. W. Cneverton, of Surbiton. Other fine gardens existed, and the report of Mr. A. Dean concludes that it is probable Surrey furnishes gardens and allotments that cannot, for area, be excelled in the kingdom.

ORCHID NOTES AND GLEANINGS.

CALANTHE × VEITCHI.

IT is upwards of forty years since Messrs. Jas. Veitch & Sons, of Chelsea, raised this beautiful variety. Its cultivation is attended with varying success, some cultivators getting bad results, whilst others grow it with much vigour, and obtain noble flower-spikes. The two chief tests of good culture are the depth and degree of brightness in the colour of the flowers, and the number that expand fully at one time. Such an inflorescence, bearing forty-seven expanded flowers of a rich bright carmine-rose colour, and with more buds ready to open, is sent by Joseph Broome, Esq., Sunny Hill, Llandudno (gr., Mr. A. C. Axtell).

DENDROBIUM PHALÆNOPSIS ALBUM.

Although importations of this showy species of Orchid have been prolific in light-coloured forms, few possessing pure white sepals and petals have appeared. Out of the first importation a variety flowered which had this peculiarity, and on the lip a few light rose-purple lines. This being the nearest at that date to an albino, was known as *Dendrobium-Phalænopsis album*. Later an albino with no colour on the lip was found, which received the name of *D.-P. hololeuca*. The original plant of the true albino is in the collection of Elijah Ashworth, Esq., and a similar one in that of Sir Trevor Lawrence. A fine flower of pure white, except for a light rose purple veining on the front lobe of the lip, is sent by Mr. T. J. Nelson, Ashgate Lodge Gardens, Chesterfield.

THE WEST AUSTRALIAN DESERT.

THE following communication has been obligingly forwarded to us by Messrs. Jas. Carter & Co., of High Holborn:—

"I was told before I began, that I should find it impossible to raise a blade of grass or anything else on this ground of rock and cement, harder than rock; and at first I feared I should find it true, for on attempting to put a shovel (there are no spades here) into the ground, I could only get 2 to 3 inches of soil, then the pickaxe had to be brought into requisition. I dug out a hexagonal-shaped garden 18 feet across, and 2 feet deep, and I have sown Beans, Peas, Spinach, Beet, Broccoli, Endive, Radish, Turnips, Parsley, Kale, Carrot, Lettuce, on one half; Convol-

vulus, Sweet Peas, Nasturtiums, Poppy, Mignonette, *Viscaria cardinalis*, *Nemophila*, and Candytuft on the other half. The French Beans make a show, but I do not think they will yield well. Peas are magnificent, with pods 3 to 4 inches long, and full of large-sized Peas. Spinach is a continual feast, we have gathered good supplies five times, and within a fortnight thereafter another supply awaits us. Onions and Carrots do not thrive, but all the other vegetables are in splendid condition.

Mignonette, Sweet Peas, Tom Thumb Nasturtiums, and *Nemophila*, are in full bloom, the other flowers are coming on. People come from miles round asking the privilege of seeing the garden, and go away amazed that such things can be grown and look so healthy in a land where there is no water, and no soil, and where the sun makes the temperature vary between 80° to 110° in the shade; but economising the bath and house-water, and making shelter with old coke-bags sewn together, have much to do with it. *T. H. Edmonds.*

THE CHRONICLE OF A LITTLE CORNISH GARDEN.

LATE AUTUMN.—Preparations for next year, rather than present results, are now seasonable in the garden. Still it cannot be gainsaid that there are plenty of flowers and abundant interest. Of course, the most important flowers blooming are the semi-early Japanese *Chrysanthemums*, of which I have a number of varieties growing in the open borders. A few that I have specially admired are the large canary-yellow *Soleil d'Octobre*, with paler reverse; the chestnut *Crimson Pride*, with bright bronzy reverse; *Beauty of Scholing*, a sort of deep reddish bronze-yellow; *Bronze Prince*; the very dwarf *Orange Child*; the pure white *Queen of the Earlies*; and the beautiful red *M. Maxime de la Rocheterie*. Several of the beautiful single *Chrysanthemums* are beginning to open, but they will not be at their best until next month. I do not grow *Chrysanthemums* "as they ought to be grown," but simply as I should any other herbaceous plant. The result is, that I do not get any monster blooms, but simply masses of flowers of about one-sixth exhibition size. Some "perfect" specimens of exhibition blooms of Japanese *Chrysanthemums* have just been sent me. They strike me as almost indecently vulgar, the size of the flower being the quality which monopolises the whole attention. The flower, as it seems to me, is out of all proportion to the supporting stem, and has lost as much of its grace as a Japanese *Chrysanthemum* can do. Coming at the time they do, when we all spend more time indoors, it is fortunate that *Chrysanthemums* are such splendid cut flowers, lasting for a very long time in water.

Those truly perpetual bloomers, the Tea Roses, are, even now, flowering freely. The varieties in bloom include *Ma Capucine*; the free-flowering, salmon-yellow *Madame de Watteville*, each petal of which is edged with rosy-pink; the deep straw and orange *Perle des Jardins*; the beautiful but little-known *George Nabonnand*, with its handsome rose-red buds; *Souvenir d'une Amie*, with large rose-tinted blooms; and some eighteen others. Among the newer Tea Roses which I have grown, and found worth growing, are *Empress Alexandra of Russia*, a free-flowering rose, a coloured bronze, orange and crimson; *Souvenir de Jeanne Cabaud*, coloured copper, apricot and purple; a rose-flesh kind called *Madame Cadeau-Ramey*; *Frau Geheimrath von Boch* (which name would be interesting if pronounced by some country auctioneers), of a beautiful golden-cream colour; and a sport from *Madame Falcot*, named *Emanuel Geibel*.

The class of hybrid Tea Roses is rapidly growing in favour, and every year one sees more and more of these Roses grown. To my eyes they lack a very great deal of the delicate grace of the true Teas, but their value is, nevertheless, very great. The first hybrid Tea Rose was *La France*, which M. Guillot introduced in 1867. This very sweet Rose, with its beautiful pink and rose colouring, was one of those "chance" products of Nature's hybridisation experiments; but most, if not all, of the subsequently-

introduced varieties have been the result of artificial fertilisation. The delicately-tinted Captain Christy, which was the second hybrid Tea, being introduced in 1874, is everywhere a favourite Rose.

I have been planting against my trellis a number of climbing Roses, and also a selection of Vines, Clematises, and other climbers. A species of Vine with which I have been much taken is *Vitis heterophylla humulifolia*, with its markedly-lobed leaves, and beautiful blue fruits. This Vine was introduced from China about 1870, but does not appear to be much grown as yet. All the Vines, however, are worth growing for their foliage, if space can be spared for them. The beautiful race of Clematises deserve a volume to themselves. The different species bloom from March to December, and every shade of colour from white to blue, from yellow to scarlet, is represented. In the matter of scent, too, few flowers possess a sweeter fragrance than *Clematis flammula*, the wild Clematis of Southern Europe. This species and the hedge Clematis (*C. vitalba*), or Traveller's Joy of our English hedges, are the two best known species, and, until some forty years ago, were, with *C. viticella*, almost the only kinds grown. About that time, however, the Japanese and Chinese species were introduced, and English gardeners were made familiar with the *azurea*, *patens*, *montana*, and *lanuginosa* species. Of these the most important is *C. lanuginosa*, which was sent to England by Fortune in 1850. The flowers are very large, lilac-coloured, and star-shaped, and are produced during the four months, June to September.

Although often inferior to the species from which they are derived, yet it is difficult to over-estimate the importance of the numerous beautiful hybrid Clematises which have been produced. Of them all, perhaps the popular favourite is *C. Jackmanni*, with its deep, velvety, purplish-violet flowers; and it is itself the parent of a whole group of varieties. The treatment of most of the Clematises is simple. They are satisfied with ordinary garden soil, and simply require a little shelter, plenty of air and light, and some support to climb. The different sections require pruning in different ways. The plants of the *Jackmanni*, *viticella*, *lanuginosa*, and *cerulea odorata* sections require to be cut in the winter well back to the old wood, as they bloom on the shoots of the current year; on the other hand, the *florida*, *patens*, and *montana* sections should be pruned as little as possible, as they flower on the previous year's wood. Of the outdoor kinds, *C. patens* and *C. montana* are the first to bloom, and the *Jackmanni* and *lanuginosa* sections carry on the flowering till late autumn. *Harry Roberts, November.*

SOME NEGLECTED GREEN-HOUSE PLANTS.

(Concluded from p. 402.)

SCUTELLARIA Mocciniana, although usually grown in the stove, is nevertheless well adapted for the purpose under consideration. Cuttings taken in spring and rooted in the propagating-frame, if potted off into 48-sized pots, and grown in a temperature, at night, of about 60°, will make nice plants for the late summer and autumn. The young growths should be pinched once or twice, with the object of forming nice bushy plants. An abundance of showy scarlet flowers may then be expected, as these are produced in bunches at the end of the shoots.

The numerous hybrid forms of *Lantanas* are very useful as summer-flowering subjects, though some, perhaps, may object to them, on account of their slightly unpleasant scent. They are propagated by cuttings taken in the early autumn; these, when rooted, winter well in a cool house. In spring a move into 48-sized pots will be necessary, using for the potting compost loam and leaf-mould in equal quantities. If large specimens are required a further shift, during summer, into 6 or 8-inch pots must be given. *Lantanas*, when grown as standards, make very useful decorative plants. With this object in view, the leader of the young plant should be trained to a height of about 2 feet before being stopped. The growths resulting from this operation will pro-

bably be rather weak, but after resting the plant during the following winter, and cutting back the former before starting in March, the succeeding shoots will be more sturdy and short-jointed. It is a mistake to use too large pots; top-dressing should rather be resorted to, or the plants repotted in the same sized pots, after removing as much of the old soil as possible. Very handsome specimens can be obtained in 6-inch or 8-inch pots.

I might write in detail of many more, but will conclude with a short list of others, no less interesting than the foregoing: *Statice profusa*, *Nierembergia filicaulis*, *Eucomis punctata*, *Calceolaria alba*, *Solanum Balbisii*, *Crinum Moorei*, *Jacobinia magnifica*, *Crassula falcata*, all of which are well worthy a place in a collection of greenhouse flowering plants. *Harry H. Thomas.*

THE PASSIVE LIFE IN BULBS AND TUBERS.

M. LECLERC DU SABLON communicated to the *Comptes Rendus of the Académie des Sciences* for October 31 a paper, which is of interest in connection with some recent communications to our pages on the same subject. The author says that two consecutive periods of activity in a perennial plant are always separated by a period of dormant life, during which the activity of growth appears to be suspended. This passive life is illustrated with much clearness in species which store up a reserve of nutriment in subterranean organs of widely different appearance. This is the case with the Tulip, the Hyacinth, the Asphodel, &c.

When the fruits are fully ripe, all the aerial parts of the plant wither, and there remains nothing but the underground bulbs or tubers which, until the recommencement of growth (that is sometimes during many months) show no exterior modification.

While, in the case of trees and shrubs, the season of rest usually coincides with that of winter, it is to be noted that most bulbous plants pass into a state of diminished activity at the beginning of the summer, and begin to vegetate again in autumn. This is the case with our indigenous Orchids, and with the greater part of bulbous Liliaceous plants, the *Ficaria*, *Arum*, &c.

It appears that these plants have to protect themselves from drought more than from cold. One of the chief characteristics among the reserve-organs during the period of dormancy is the comparatively small quantity of water which they contain. In tracing the variations in the proportionate quantity of water contained in a bulb during a whole year, it is seen that the minimum amount of water in the bulb always coincides with the commencement of the period of latent life. This diminished amount of water has no definite relation to the dryness of the soil. The comparative influence of more or less moisture in the soil is very slight, whilst the state of growth induces considerable variations in the proportion of water in the bulbs. It is, then, only in the osmotic power of substances enclosed in the cells that the cause of the low proportion of water contained in bulbs in a state of repose can be sought. The hydro-carbonaceous reserve matters are reduced to the minimum at the commencement of latent life. Then are found, in varying proportions, according to the individual, starch, inulin, dextrine, saccharose. The almost universal absence of glucose is one of the characteristics of the passive condition life; Onion-bulbs and the tubers of *Asphodel* form exceptions to this rule.

The author then draws attention to the internal modifications induced in bulbs or tubers in cases where the exterior indicates no change. Hyacinth-bulbs form a good subject for showing the nature of these modifications. At the end of May the period of active growth is over; the bulb then pass into a condition of rest, and can be drawn out of the ground. On June 1, M. Sablon found 29 per cent. of starch (the proportion was estimated by comparison with 100 parts of dry matter), 26 per cent. of dextrine, 1 per cent. of saccharose, and traces only of glucose. Such bulbs could apparently be kept until October

without showing outward change, but on analysing them the author found 26 per cent. of starch, 21 per cent. of dextrine, 3 per cent. of saccharose, and 2 per cent. of glucose. It was thus evident that during this period of apparent rest, important modifications were in progress; the digestion of the reserve stores had begun, and the bulb was proceeding to a stage when it would have been ready to grow. It is known from the observations of various writers, that bulbs and tubers cannot as a rule develop without passing through a period of rest. Onion-bulbs were equally modified during their resting period.

On September 10, a bulb already in repose held 10 per cent. of glucose, and 22 per cent. of saccharose. On December 4, analogous bulbs kept out of the ground contained 17 per cent. of glucose, and only 7 per cent. of saccharose. Thus it is shown why the alimentary qualities of the same variety of Onion may vary with the season, and also why, at a given moment, Onion-bulbs sprout whatever their exterior conditions.

The changes that take place in the *Ficaria* (*Celandine*) tuber during the season of repose are also considerable. After May, when the leaves are withered, a great part of the starch is transformed into dextrine, then into saccharose. Later on, an inverse transformation is effected; the saccharose is changed into starch. Finally, before growth in September, the starch is once more partially transformed into dextrine and sugar. In this case the reactions which take place during the resting period are more complex as they operate, according to the season, sometimes towards one, sometimes towards another end.

The greater part of bulbs and tubers which pass into a state of latent life are thus subject to considerable alterations in composition, the exterior form not being modified in appearance. The diastases, which are almost wholly wanting when the period of latent life begins, are formed little by little, and bring about the commencement of the digestion of the reserve substances, and the beginning of growth.

LAWSON, AND HIS WORKS.

(Concluded from p. 413.)

It is unnecessary to do more than skim the seventeen chapters of *A New Orchard*. A full-page engraving shows its shape to have been broadly oblong, with its longest sides running north and south. It was divided by cross and lengthwise walks into six divisions, the whole enclosed by hedges. The two northmost divisions contained the subdivided beds and borders of the kitchen-garden. The two central ones were planted, the one with fruit-trees at 24 yards apart, and the other contained a knot for flowers. Of the divisions nearest the house, which overlooked the orchard from the south, one exhibits a large Apple-tree, while in the other a horse is being trained by a man, who holds in his left hand a flexible wand.

For many reasons, of which the chief was good soil, shelter from winds, and water close at hand, Lawson considered a site lying near the bank of a river, the best for an orchard. As shown in the cut, the ground sloped from the house in a gentle declivity towards the river, and each of the three lengthwise walks were provided with two short "stairs" to render the descent more easy. Another river flowed between the house and the orchard. High moun's were raised at each of its four corners, and close to each of these is a stilt-house. On the west side, the out-fence was planted with stone-fruit, which is elsewhere explained as consisting of Cherries, Bullies, Damsons, Barberries, and Filberts.

On the east side the fence appears to have been of a more formidable nature. First, to protect from the east wind, a double row of trees consisting of Elms, Ashes, and Oaks, was planted. Between the lines of these, a walk was laid out. Inside this outermost fence and next to that surrounding the orchard was another walk, also with its row of tall-growing trees on each side. The orchard-fence was of the same character with that on the west side. Lawson had not a little to say about fences, much of which is reminiscent of Liebhaut and De Serres. It is, in fact,

not difficult to imagine his plan of an orchard to have been to a great extent idealised. What follows, however, appears to be more truly English.

A common kind of fence seems to have consisted of earth, or the latter and sand mingled together. The Rev. John Laurence, it may be remembered, as he tells us in *The Clergyman's Recreations*, when he entered on his duties at Yelverton, found his garden rudely enclosed with a wall of clay. Lawson, in so far as he liked these so-called walls, did so because wall flowers sown at "Mighill-tide" grew thereon and flowered "time'y for bees." Otherwise, he concluded they were of no value, "but soon decay by reason of Ashes, Rountrees (Mountain Ash), Burt-trees (Elder), and the roots of other trees" working their destruction. Stone, though expensive, formed the best wall. "Best," he adds, "of all others (in mine opinion) Quickwood and moats, or ditches of water, is the best fence." Where the ground is "unequal," double ditches are commended.

tree "to live the tenth part of his age," and this largely on account of the roots being unable to penetrate under the walls in pursuit of nourishment. He assumed with much truth that trees on a wall became excited in spring, when, if a hard frost occurred, it "kills the forward fruit in the very bud." He, moreover, mildly ridiculed the practice of those who planted trees "on the north-side of walls to save their roots from drought;" significantly adding, "The heat of the sunne is as comfortable as the drought is hurtful;" and "Want of sunne can in no way be helped while water is a souveraigne remedy against drought."

Lawson favoured a large orchard for two reasons; firstly, because its produce was two to four times more profitable than corn; and secondly, because it was cheaper in comparison to fence a large orchard than two or more smaller ones of the same combined acreage. Fruit-trees were also more fruitful when allowed room to spread. Instead of preparing small

the latter also graced the orchard. Some people, we are told, grew "grasse in their orchards, in order to moysten the ground"—a system, however, for which he had no good word.

Even at that early date fruit-trees ready grafted were bought and sold, but Lawson condemned the practice as at once expensive and bad, inasmuch as the young trees, after a lengthened journey, did not thrive; or one did not always secure the sorts wanted, but some others instead, and the proprietor and his gardener meanwhile got out of practice! For these reasons he concluded that "sets" (stocks) are best planted at home, and in due time grafted or budded. "Sets" were of many kinds. Lawson disliked slips (cuttings); less strong was his dislike of "Bur-knots." "Plants with rootes growing of kernels of Apples" were a usual and approved kind. Equal to these were suckers. But of all sets, he best liked those from seeds, sown where they were to remain to be grafted when sufficiently strong. Grafting and summer budding are described at length, as it was by all writers of the period.

In arranging an orchard, Lawson chose "the Warden and Winter Peare" as being the tallest, and a Pippin and Costard tree among Apples to be placed on the north side, Quinces on the south side "or ends," and Apple trees in the middle. Other fruits were planted in the fence.

In the chapter on dressing (pruning), our author shows himself to have been far in advance of his contemporaries. He avers it was a "common saying and unskillfull opinion," . . . "Let all grow, and there will be more fruit; and if you lop away superfluous boughes, they say, 'What a pitty is this! How many Apples would these have borne?'" Forests, like orchards, were grossly mismanaged. In scathing language, and at some length, he exhibits their sad condition. "For one thriving tree, four, nay, sometimes twenty-four evil thriving, rotten, and dying trees. What rottenness! what hollowness! what dead armes? withered tops? curtail'd trunks," &c.

His system of pruning is equal to that practised to-day. The trees were trained with short "boalls," and pruned so as to spread their "armes" and "boughes" widely around. They were kept moderately low; the lowest boughs within reach of a man's outstretched hand, and its highest twig to be not past "two yards higher, and that no twig touch his fellow;" and when any bough or spray shall "amount above the rest, either snub his top with a nip betwixt your finger and your thumb, or with a sharp knife, and take him cleane away."

Fruit-trees planted more or less close to the edges of walks were trained to suit the position, and branches occasionally met and formed a shimmering shade from the summer's sun. R. P. Brotherton.



FIG. 126.—PTYCHOSPERMA SANDERIANA.

There were each 2 yards wide and 4 feet deep, and sufficiently far apart to allow for the cast-out soil to form a raised walk 5 or 6 feet above the general level, and 2 yards broad on the top. The face of the outside bank was set with four chess or rows of Quickwood, and the inside bank with fruit-trees of the kinds already mentioned. Such fences even earlier than this were by no means uncommon in England, and, with slight modifications, they were in use both in England and Scotland for a long period afterwards. Traces of their existence are still occasionally to be found. An orchard, situated on an exposed position, was further sheltered on the North side by means of houses, walls, or high trees.

Lawson cultivated in his garden neither Peaches nor "Apricoakes." Towards "Arborists," who, in order to ripen these, or to obtain "timely," or early fruit of hardier kinds by spreading out their branches to the greatest extent possible, and then nailing them with tacks to walls, he exhibited but a slight degree of respect. Some of his reasons for discouraging wall-fruit are curious, e.g., because it suffered not the

at tions for each tree, was advised to level and trench the whole of the enclosed ground. The method of trenching was not unlikely that of his time, and was effected by opening a trench to the depth of 18 inches, which was filled with rotted manure, upon the top of which the material out of the next trench was thrown, and so on, until all the ground was similarly treated. Wisely, however, shallow planting is recommended, and the roots for the first year or two would not come in contact with a rooting medium so adverse to fruitfulness. The unusual space of 24 yards is noted as a proper distance to set the trees each from the other. The ground between the trees was not, however, left unoccupied, for here, during the next 20 or 30 years Lycoras, Saffron, vegetables, and flowers were cultivated. Broad and narrow walks were laid out to every part of the orchard, and these were bordered with "Currens, Feaberries (Gooseberries), Raspberries, &c." In suitable positions, banks and seats were raised, and planted with Violets and "Camomils," while walks of

PTYCHOSPERMA SANDERIANA,

Hort. Sander.

We have in this plant a spineless Palm, of graceful form, with pinnate leaves, as is readily seen in the small example herewith (fig. 126). As a small plant growing in a 6 or 8-inch pot, it makes an admirable decorative object for placing in vases, jardinières, &c. What will be its aspect when aged, we have no means of saying. A plant was shown by Messrs. Sander & Co., of St. Albans, at the meeting of the Royal Horticultural Society on October 25 this year, a First-class Certificate being awarded.

FOREIGN CORRESPONDENCE.

M. TRUFFAUT'S NURSERIES.

(Concluded from p. 426.)

A SIMILAR establishment is that of M. Truffaut, where, speaking generally, the notable kinds of plants are grown. Amongst Palms I noted here, *Cocos flexuosa*, *Caryota urens*, *Licuala grandis*, with undivided, elliptical, dentate leaves; *Phoenixophorum Seychelliarum*, and *Martinesia caryotefolia*.

Very remarkable was a strain of *Hydrangea* Hor-

teris, of compact growth, and with fewer heads nearly a foot across. A fine plant is *Cyathophyllum magnificum*. Two good Ferns were *Adiantum Hensleyanum*, and *Pteris gracilis*. *Poinsettia* (*Euphorbia*) *pulcherrima* is grown here in quantities; also *Physalis Franchetti*, with its ornamental seed-pods. *Rheedia glaucescens* is a little greenhouse plant, resembling, as to its foliage, *Mimosa*; the flowers are tubular, red, with a yellow margin.

THE POTAGER.

I also visited the horticultural school, known here as The Potager. Fruit-culture is the chief feature here, and a large area is devoted to it. The trees are mostly trained in cordon form along wires, and as espaliers for walls. My visit being in the beginning of November, I was too late to see the fruit on the trees. In the way of exotic plants, very few remarkable things are found here. In the large Palm-house I noticed a good specimen of *Areca Baueri*. A climber worthy of note is *Ceropegia elliptica*, with flowers of a yellowish-white colour, spotted with grey. Another plant of strange growth is *Dorstenia ceratophylla*; the inflorescence is in the form of a lengthened horse-shoe, provided with spines on all sides; the leaves are long, heart-shaped, springing from a kind of stunted stem, covered with scales. *Philodendron Andreanum* is a pretty plant, with heart-shaped, shiny leaves, brown, with white mid-ribs.

Amongst the *Chrysanthemums* exhibited at the time of our visit were *Colosse Grenoblois*, purple, incurved; *Olivier Silhol*, red-brown, with yellow reverse; *Globe d'Or*, of the same colour as *Source d'Or*, but of more globular form and broader petals; *Soleil d'Octobre*, a fine yellow variety; *Reine Nathalie*, white, incurved; *L'Aigle des Alpes*, much like *Edwin Molyneux*; *La Savoie*, a beautiful cream-coloured flower, the lower part bright rose; and *Morillon*, yellowish-brown, hairy. *Th. J. Dinth, Le Chesnay, November, 1898.*

PLANT NOTES.

PENNISETUM RÜPPELLIANUM.

As a decorative table-plant this elegant grass is extremely useful; the leaves are very narrow, $3\frac{1}{2}$ feet long, gracefully recurved, and drooping, resembling those of a small *Miscanthus*. The inflorescence is spicate, 9 inches in length, borne on a stem 3 feet high, and consists of a multitude of hair-like, silky awns, tinted a violet-purple, with yellow, feathery styles. The spike presents a very handsome appearance, which is retained in a cut state for a considerable time. The leaves, upwards of 100 of which are produced by a single plant, droop 2 feet below the pot, and remain green down to the tips. It is particularly suitable for single flower-stands, and out of flower as a border for staged groups of plants, such as *Chrysanthemums*, &c. It can be grown well with the utmost ease in a small pot, a point of some merit in table-plants. It is of considerable hardihood, and will keep in good condition in a temperature down to freezing point for some time. It grows most satisfactorily in the warm greenhouse. The plants like plenty of water, and can be raised from seeds. Seedlings are decorative within three months from seeds. *Geo. B. Mallett.*

CONTINENTAL NOVELTIES.

AMONG the novelties offered by Mr. J. C. SCHMIDT, of Erfurt, are a new transparent Radish, *Eiszapfen* (Ice-ice), 4 to 5 inches long, which exceeds all other varieties in regard to earliness, roots being fit for use in twenty-two days after sowing; *Cactus Dahlias* "Trump," orange-scarlet, and "Bravo," scarlet, and many others.

A CUCUMBER FOR WINDOW CULTURE.

In the *Handelsblatt für den Deutschen Gartenbau*, No. 46, we read of a new variety of Cucumber called *Kytowsche Zimmergurke* (Dwelling-room Cucumber),

which, while furnishing an ornament for the window, presumably one with a warm, sunny aspect, likewise provides the housewife with something of practical value. The variety succeeds, contrary to others, in a smallish flower-pot filled with rich soil, and furnishes a succession of short, thick, slightly-curved fruits.

Mr. F. C. HEINEMANN catalogues new varieties of *Salpiglossis*, *Begonias* with mottled or marbled segments, and *Gloxinias* with a yellow throat, besides *Pansies* and various forms of *Myosotis*.

Messrs. V. LEMOINE ET FILS, of Nancy, offer several varieties of double-flowered forms of *Begonia semperflorens*, already alluded to in these columns; *Anemone japonica* "La Fiancée," numerous forms of *Gladioli*, *Montbretia*, and *Phlox*. Among shrubs we notice mention of *Cotoneaster pannosa*, with small partially evergreen, oval, mucronate leaves, white on the under surface; the fruit globular, red, and of the size of a Pea. It is a native of Yun-nan, whence it was introduced by the Abbé Delavay. There are also various forms of *Deutzia gracilis*, *Philadelphus*, double *Lilac*, and *Weigela*.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorset.

The Warm and Intermediate-house.—*Epidendrums*, *Miltonias*, *Arpophyllums*, *Odontoglossum grande*, *O. Schlieperianum*, *O. Insleayi* and its variety *splendens*, *Zygopetalums*, and *Stanhopeas*, should be afforded water occasionally, so as to prevent the shrivelling of the pseudo-bulbs; *Vanda tores*, *V. Hookeriana*, *Luisias*, and other Orchids with terete leaves, need but little water while at rest, and light syringing overhead on warm, sunny days is all that is required now. *Cymbidiums*, *Lycastes*, *Anguloas*, and *Maxillarias*, many of which are partially terrestrial, should receive water occasionally.

The Cool-house.—Those species which belong to this house, viz., *Odontoglossum crispum*, *O. triumphans*, *O. Pescatorei*, *O. Halli*, *O. luteo-purpureum*, *O. Edwardi*, *Oncidium macranthum*, *O. serratum*, *O. loxense*, &c., should be still more sparingly afforded water in winter, but the materials must not be allowed to get very dry, and moisture in the surrounding air and ventilation are very essential to their well-being, the air being admitted by the ventilators near the floor. The *Masdevallias* which are inmates of this house are nearly always growing, still, the potting materials should not be kept in a saturated condition, or the leaves will become spotted. Among plants that require attention at this season are *Maxillaria grandiflora*, and *M. venusta*. If any of the plants are bare in the centre, they may be subdivided, and the divisions placed compactly together in new pots or pans, or re-potted singly. It is important, when re-potting them, to provide good drainage, abundance of water being required during growth. The compost should consist of fibrous peat one-third, and sphagnum-moss two-thirds, mixed with plenty of small crocks and coarse silver-sand. Pot firmly, and keep the base of the pseudo-bulbs slightly higher than the rim of the pot. Afford water sparingly till roots begin to form on the new growths, then gradually increase it in amount. *M. striata*, *M. s. grandiflora*, *M. Turneri*, *M. nigrescens*, *M. luteo-alba*, *M. tenuifolia*, *M. Hübschii*, *M. Kimballiana*, *M. praestans*, *M. Amesiana*, *M. fucata*, *M. scurrilis*, *M. Lindeni*, *M. variabilis*, *M. lepidota*, *M. picta*, *M. Sanderiana*, and *M. Houtteana* are species easy of cultivation, and the most suitable season in which to afford fresh rooting material is when roots appear at the base of the young growths. *Maxillarias* thrive in the cool-house, if stood at the warmer part of the house, and where they can obtain rather more sunlight than is necessary for *Odontoglossums*, but not direct sunshine. They require as much air and moisture as the other occupants.

Sophranitis grandiflora.—The growths of this plant being at this season but half-developed, it should receive plenty of root-moisture, carefully afforded, so that not any lodges in the growths, or is spilled on the blooms, to shorten their season of beauty. If any of the plants seem to need repotting, this operation may be carried out as soon as the flowers fade. Shallow pans are better than any sort of pot for *Sophranitis*, and at this season these should be hung

up near the roof, and in the summer stood along with the *Odontoglossum crispum* on the stage. Afford plenty of drainage materials, even to the extent of three-fourths of the depth of the pan, and over this place a thin layer of peat and sphagnum-moss, which is all that is necessary. *S. cernua* and *S. violacea* thrive in the cool part of an intermediate-house, as does the pretty *Ornithidium Sophranites*, now in bloom, which may be grown in the manner recommended for *Sophranitis grandiflora*.

Odontoglossum coronarium.—This species, in order that the flower-spikes may acquire strength, should be placed where sunlight can reach it, this being an important point. It is a plant which must be afforded plenty of moisture at the root, and sphagnum-moss in a growing state.

Temperatures.—The degree of warmth maintained in the various houses during this month should be as follows:—East Indian, at night, 60° to 65°; *Cattleya*, 55° to 60°; intermediate, a few degrees less; Mexican about 55°, and the cool or *Odontoglossum-house* as near to 50° as possible.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

Peach and Nectarine Trees.—I alluded to the earliest *Peach-house* in my Calendar for Nov. 26, and the time has now arrived when this house must be closed and forcing begun. Where the new early varieties are planted, three or four weeks hence will be soon enough to make a commencement, but *Royal George*, *Bellegarde*, and *Violette Hative* *Peaches*, and the *Elruge Nectarine* take a longer period to mature their fruits. See that the borders or the soil in the pots do not lack moisture. Where the forcing was commenced in late November, signs of growth will be evident in swelling buds, and to meet the needs of the trees the temperature should be raised to 50° at night, and 55° by day if fire-heat alone be employed, and during sunshine to 65°.

The Potted Strawberry Plants.—A succession of fruit can only be maintained by placing plants in the forcing-pit, preferably on or in a hotbed of leaves, at intervals of a week or ten days, and in number equal to the demands, remembering that twice as many are required to furnish the fruit, now, than will be the case six weeks hence. If a pit be used at the early stage, the plants will be near the glass, but in vineries and peacheries it is not so easy to find good places for them, unless shelves exist, hanging or other. The earliest batch should be examined, and if greenfly and thrips be discovered, fumigate the house or pit on the first calm evening. In mild, sunshiny weather, the temperature by day may range two or three degrees higher than when reverse conditions prevail. Do not let the plant remain in the leaf-beds after the young leaves push, and flower-buds become visible, but remove them to the forcing-houses, or *Strawberry-house*. Slugs are likely to harbour about the plants, so that each plant and pot should be closely examined, and it is good practice to wash the pots, and lightly surface the soil with loam. Do not start the plants at a higher temperature than 45° by night and 50° by day.

The Cucumber.—It is now time to sow seeds, and raise plants for setting-out in the month of February. My method is to employ new 3-inch flower-pots, and fill them to within an inch of the rim with a compost consisting of sifted loam $\frac{2}{3}$, Mushroom bed-mauure $\frac{1}{3}$, and press one seed into the soil in each. If the soil is moist, as it should be, no water ought to be afforded before germination takes place. The seeds should be raised in a hot-bed of 80°, with a temperature of 70° at night, and 75° by day. Failing this convenience, the seed-pots should go into a Pine-stove or propagating-house in a light spot, and be protected from mice if they are likely to be present. When the plants are a few inches high, partially fill up the pots with warm soil, and in a week or ten days report them in 5-inch pots.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford, Kent.

Garden Roses.—These, in some sense a new class of Roses, which some nurserymen have done much to popularise, bid fair to become prime favourites with all excepting exhibitors of Roses at exhibitions. The varieties are suitable for any position in the garden, and equally at home in covering an unsightly bank, an arch or a trellis, or a lifeless tree-stump. They grow with rapidity, and flower

abundantly, soon forming pleasing objects in the garden. They require scarcely any pruning beyond the removal of weak and blind, that is, flowerless growths. Most of them are single-flowered, and the tints of their flowers are very diverse. Of the newer varieties Messrs. Paul & Son's Dawn, and splendidly staged by them at the National Rose Society's show at the Crystal Palace this year, is a great acquisition; the colour is a rosy-pink, and the plant is stated to be thoroughly hardy. Royal Scarlet is another variety of much merit. Lack of space forbids mention of more names.

Clematis.—The present affords a suitable time for planting *Clematis*. By making a proper selection, the *Clematis* may be had in flower from April to the end of October. The species and varieties are suitable for pegging down so as to form beds in the flower-garden, the beds, if large, being given permanent edgings. The varieties of *C. patens* and *C. florida* flower on the old wood, whilst the *Jackmanni*, and varieties of it, flower on the newly-made shoots. All of the varieties are gross feeders, needing, therefore, liberal manuring.

Violets.—The plants in the outside borders have been flowering freely, needing, however, the constant removal of decaying leaves, otherwise the crown of the plant suffers. If the soil be of a very close nature, a slight sprinkling of leaf-soil and sand occasionally will be found a corrective of the fatal damping-off.

Bedding Plants.—Such plants as *Myosotis*, *Silene pendula*, *Aubrietias*, *Wallflowers*, and others, should be kept clear of decayed leaves, and the soil of the beds stirred with a hand-fork or Dutch-hoe wherever it be beaten down by heavy rain. Keep a sharp look-out for mice, or corms and bulbs will suffer when they push through the soil.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Eucharis grandiflora.—Plants which may have been resting in an intermediate-house may be hastened into flower at this season by having the pots placed in a mild hot-bed constructed with leaves and litter, in the proportion of three of the former to one of the latter, the bed being made very compact in order to run no risk from excessive fermentation. Other plants which have flowered, if in need of re-potting, may be attended to at this date, plunging the pots in the hot-bed likewise. After re-potting these plants, very little water is needed before growth has begun.

Allamandas, *Clerodendrons*, *Bougainvillea glabra*.—These plants, now resting at the cool end of the stove, if they are required to flower at an early period next year, may be plunged in gentle bottom-heat, and the soil in the pots moistened thoroughly, but affording no more water till signs of growth are visible, but damp them overhead two or three times a day. Maintain a night temperature of 60°. If *Bougainvillea glabra* has not been pruned, it should now be done. *Clerodendron Thomsonæ* var. *Balfouriana*, *C. fallax*, *C. paniculatum*, the first-named a climber, and the others erect-growing shrubs, do well under the hot-bed treatment at starting. The climber should be spurred in, and the shrubs cut down to the hard wood. No re-potting should be performed with these early-started plants, only the exhausted upper crust should be replaced with fresh compost, made firm by hand. Satisfactory results will not follow if the plants have not been rested in a cool-house. Naturally *C. fallax* and *C. paniculatum* are late flowerers, so that, even plants early started will not come into bloom before May or June. *Allamandas* of all species succeed under the same kind of treatment, but it is more convenient to grow the plants in pots, pruning the shoots severely just before the buds push forth, and pinching the young shoots once or twice during the season of growth. When grown on the roof or walls of a warm-house, the pruning may be much less severe, and considerable extension may be permitted. The earliest started plants should not have their roots disturbed beyond what is unavoidable, in putting the drainage in good order and surfacing the balls. Later plants may be re-potted when the buds start.

Gardenias.—In order that the plants may be strong and healthy, and the flowers of a large size, a temperature of 65° at night is necessary, and that they be kept free from mealy-bug. The younger part of the stock of these plants should not be stinted of rooting-space, and when a desirable-sized pot has been reached, and roots are abundant, manure-water, chemical manure, such as Clay's, or other, and clear

soot-water should be afforded from time to time in addition to clear water. Plants with swelling flower-buds may be placed on mild bottom heat. *Gardenias* should never become quite dry, neither should they be afforded excessive quantities of water, the leaf assuming a sickly appearance and the flower-buds dropping chiefly from this cause.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Raspberries.—The pruning and selection of the canes should be deferred till the chances of our getting severe frosts are over, because there is always a danger of the canes being killed when these are cut across and the pith exposed; but, weak and superfluous shoots and all suckers may be removed forthwith. The suckers, when dug up carefully, afford stock, which may be grown on in any good ground in the kitchen-garden or orchard, in readiness for forming new plantations. A good fence for the Raspberry consists of wooden posts standing 4 feet above the ground on each side of the rows, and 2 feet distant from them, at a distance of 16 feet apart. On the tops of these posts an iron rail about half an inch thick should be fastened, and the fruiting canes tied to this with matting, half of them going to each side; this leaves the central space for the young growths. On poor dry soils canes of the Raspberry seldom grow tall, and a single line of posts, 4 feet high, put into the ground close to each row, affords a more suitable means of training. These posts should carry two galvanised wires of No. 12 gauge, fitted with *raidisseurs* or tighteners for making them taut, fixed by staples at 2 feet and 3½ feet from the ground, the canes to be trained vertically to these. Either of the above methods is much better than tying the canes in a cluster to a stake, put in midway between two stools. Market-gardeners sometimes dispense with supports by pruning the canes back to 3 feet; but the crop of berries is light compared with that obtained by the other methods. The canes being made secure, and the ground cleaned, a thick dressing of farmyard dung should be applied, and left on the surface. Raspberry plantations should not be dug deeply, as by so doing the fibrous roots near the surface are disturbed; the frost and rain suffice to carry the fertilising properties of the manure to the roots, and the strawy part may be raked off the land in the spring, or allowed to remain as a mulch. New plantations may be made in mild weather at this season. In very dry soils Raspberry plantations are sometimes formed on a border having a building or wall on the south side, such sites affording the coolness and moisture so essential to the well-being of the plant. The ground on which a new plantation is to be made should be heavily manured, and trenched two, three, or four spits in order that it may continue to do well for many years. Plants that have been under cultivation in the home nursery for one year are better than suckers newly dug-up for making a plantation. With regard to the plants forming a new plantation, they should be cut down to within 4 inches of the ground in March, not when planted. *Superlative* is considered the best red variety, and *The Guinea* (Bunyard), a new white Raspberry, is said to resemble *Superlative* in all respects except in colour. [Those who like a more acid fruit for preserving purposes than *Superlative*, *Fastolf*, *Red Antwerp*, &c., should grow that most prolific variety, *Semper Fidelis*. Ed.]

THE KITCHEN GARDEN.

By J. W. MCHATTIE, Gardener to the Duke of Wellington, Strathfieldsaye, Hants.

South and other Early Borders.—If the land is of an adhesive nature, potting-shed refuse, or any rich light soil should be used as a dressing, together with an addition of rotten manure, and the land bastard or more deeply trenched. There may be cases in which these borders get too light from the many additions made, and then a dressing of heavy loam would be advisable for a year or two.

Broccoli.—If on an examination of the early sorts being made, a larger number of heads are found of a size fit for consumption than are required, instead of cutting these in the usual manner, let the plants be lifted and laid in moist soil in ordinary frames, turfpits, or an open shed.

Salads.—The beds of Endive, Radishes, Mustard and Cress, Lettuce, Chervil, also Parsley, raised as directed in previous calendars, should, when frosts

threaten, be protected with Russian bast or straw-mats, or such improvised material, as Fir-branches, &c.

Protecting and Mulching Vegetables.—Let the rows of Celery and Cardoons be afforded some efficient protection against frost, and put a strawy mulch over the crowns of Rhubarb and on the Asparagus-beds, the latter having decayed manure by preference. Beds of Horn Carrots may likewise have some dry litter or bracken thrown over them in time of severe frost. These roots, if wintered successfully, become very useful to the cook early in the spring.

General Work.—Let all kinds of heavy work be pushed forward in fine weather, such as wheeling manure to the vacant quarters, trenching, and digging, turning and mixing manure and rubbish-heaps, separating that which is ready for immediate use from that which requires a longer period of time to fit it for use. This is a kind of work on which the workmen can be profitably employed when the ground is too wet, or frozen too hard, or covered with snow, for digging to be expeditiously or well done. If the drains, or the walks and roads in the kitchen garden are in need of repairs, now is the time to get these done.

THE APIARY.

By EXPERT.

Ventilating Hives.—There seems to be no small degree of agitation lately among the wise-heads in our bee-keeping fraternity respecting ventilation of the bee-hive. Some advocate the use of front wedge-blocks, some front and rear spaces, others blocks under the four corners of the hive, and still others advocate raising the cover. Now, all of these methods of ventilation, excepting the last-mentioned, are applicable only to hives having loose bottoms, and every one of them, under certain circumstances, is subject to serious objections, which, it seems to me, will be suggested to any experienced bee-keeper. My colonies are very strong—made so by careful building-up as they need room to two stories of twenty frames as early as possible after the season opens; and when they show signs of "hanging out," I simply remove one or two frames from the brood-chamber, according to circumstances, and re-space the others, which settles the difficulty with my bees. I also remove the super of frames from the upper story of such as I wish to run for comb-honey, and substitute section-cases. The wider spaces in the brood-chamber give freer access to the upper storey; and I find my bees occupy it very fully as soon as the change is made, and when I raise the enamel cloth they poke their little heads up through the bee-space and say "Thank you." It must be quite a difficult task for a bee to make its way up through a mass of bees to the surplus chamber, when spaced close as we usually put the frames when brood-rearing is started in the spring. But it may be objected to my practice that the bees will thicken the comb in the brood-chamber, so as to reduce the spacing. I think not; if there is a prolific queen to occupy the frames with brood, and especially so if the bees are working in the surplus chamber—at least, this is my experience. My hives have an entrance of ½ by 8 inches, and by practising as above described I have no lounging outside by the strongest colonies I can create. If bees need so much ventilation, why do they carefully stop up with propolis every crack and crevice they possibly can? It is more room in which to move about that mine seem to want. I think my method of ventilation subject to less objection than any other with which I am acquainted. Of course, any manipulation of a colony of bees must be done at the proper time and in the proper manner to secure the desired results, which means that the successful bee-keeper is one who has his eyes wide open all the time, and sees and appreciates what is going on in his apiary from day to day, and from what he sees and from what he reads, is prepared to take advantage of circumstances. The more I study my bees (that is pretty nearly all the time) watching their operations, their changing conditions caused by changes of weather, varying seasons, as well as difference in methods of handling them, the more I am convinced that bee-keeping is not only the most complex, but the most interesting of all pursuits. Will some one of our scientific students of the fraternity tell us why the bees always before leaving the hive for their journey, wipe their eyes with their "fore-paws?" You may ask, "Do they?" Yes, they invariably do so. It is done as they approach the exit, where the light strikes the eye, or as soon as they reach the alighting-board.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, DEC. 19 { National Chrysanthemum Society:
Meeting of General Committee.

SALES.

MONDAY, DEC. 19 { Dutch Bulbs, Roses, Lilies, &c., at
Protheroe & Morris' Rooms.

TUESDAY, DEC. 20 { Imported and Established Orchids,
at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 21 { Japanese Lilies, Palm Seeds, Roses,
Continental Plants, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—59.4°.

ACTUAL TEMPERATURES:—

LONDON.—December 14 (6 P.M.): Max., 50°; Min., 49°.

PROVINCES.—December 14 (6 P.M.): Max., 52°, Scilly Isles; Min., 41°, Stornoway.

The Lindley Library. In the year 1864 a great International Horticultural Exhibition and Botanical Congress was held in Brussels. It was attended by several of our leading horticulturists, as was that at Amsterdam in the following year. These exhibitions were the precursors of a series held subsequently in St. Petersburg, Florence, Genoa, Paris, and other cities. The cordial hospitality offered to our countrymen on the two first-named occasions naturally stimulated them to do something to show that they appreciated the kindness shown them, and that they desired to reciprocate it. Moreover, the honour of British horticulture was at stake. We could not allow Belgium and Holland to remain without competitors. This was the origin of the famous Exhibition and Congress of 1866. Singularly enough, neither the exhibition nor the congress at its beginning found favour in high places where sympathy and support might have been looked for. The financial condition of the Royal Horticultural Society at the time was not such as to warrant the council in embarking on an enterprise which was certain to be very costly, and might not prove remunerative. A guarantee fund was however raised, and an independent committee was formed, comprising many of the leading horticulturists, and presided over by the late Sir WENTWORTH DILKE, with Sir DANIEL COOPER as Treasurer; and Mr. THOMAS MOORE, Dr. HOGG, and Dr. MASTERS as Secretaries—Dr. SEEMANN having resigned office at an early stage of the work. Where all concerned threw their hearts into the work and laboured to a degree we have never seen equalled, it would be invidious to particularise individuals. There can, however, be no impropriety in stating that the ultimate success of the undertaking, so far as it was the result of any one man's work, was due to the ceaseless energy and wonderful tact displayed by Sir WENTWORTH DILKE as chairman of the committee. We do not intend at this time to go further

back to ancient history. Our present object is to allude to some of the results of this memorable gathering.

We need not say anything on the influence it exerted on horticulture in general, or on any commercial advantages that may have arisen from it. At the time, these could hardly be defined with precision, but if we look to more tangible and persistent results, we find that the influence for good of this vast undertaking is still apparent.

A donation from the surplus of a sum of one thousand pounds to the Gardeners' Benevolent Institution, ensured a benefit to the pensioners of that Society which they still, and will continue to enjoy.

Then, the *Report of the Proceedings of the Congress, and of the Exhibition*, edited by Dr. MASTERS, forms a thick 8vo volume which may fairly be described as a remarkable production, and one which will be invaluable to the future historian of botany or horticulture. Copies of this report were distributed among all the foreign visitors who honoured us with their presence on this occasion, others were supplied to those who contributed memoirs and papers to the Congress, and were also sent to most of the great public libraries of the Kingdom.

Another result, though indirect, was the establishment of the Scientific Committee of the Royal Horticultural Society. The deliberations at the Congress brought home to many the sense of the desirability of bringing together, for purposes of mutual instruction, those who practice the art of horticulture, and those whose lives are devoted to the study of the principles on which that art is based.

Lastly, we may mention as a direct result of this memorable exhibition, the acquisition of the Lindley Library, the Catalogue of which is now at the service of the horticultural community. The career of the Royal Horticultural Society has been chequered to an extent beyond that of most Societies. Sometimes flourishing, it has effected great things for horticulture, and earned the respect and gratitude of those competent to judge. At other times wasteful expenditure on objects not directly connected either with the theory or the practice of horticulture, have brought the Society to the lowest pitch. In one of these periods of financial depression, it was even deemed necessary to dispose of the valuable collection of books which had gradually accumulated, as well as of the herbaria formed by its collectors. In 1866 the Society was not indeed quite in such a deplorable state as it was a few years later; but it was at too low an ebb, as we have seen, to take the lead, as it might have been expected to do, and it left to an outside committee work which would have been more fittingly, though, as results proved, not better, done by itself. At that time the Society had practically no library, nor any chance of procuring one. The opportunity was, however, not lost by the Committee of the International Exhibition. The Library of Dr. LINDLEY was purchased out of the surplus funds, and was placed in the hands of Trustees for the special benefit of the Fellows of the Royal Horticultural Society, and of the horticultural public generally. The Treasurer and Secretary of the Royal Horticultural Society for the time being are members of the Trust, and no wave of financial difficulties can in future lead to the dispersal of the Library. So long as the Society has its headquarters in or near the metropolis, so long must the Library remain in connection with it.

For some time after the acquisition of the Library there was no proper place for its reception; the books were stored like so much lumber in a room leading out of the arcades of the South Kensington garden. Here they were useless, and the most that could be said was, that they were not exposed to the weather. After a time the books were placed in an upper shed, dignified with the name of the Council-room, access to which was obtained by a tortuous stairway, and a passage so particularly narrow that some of those who had business to transact found it not altogether easy to effect their transit. Here, however, the books were arranged conveniently for reference by Mr. DYER, Mr. HEMSLEY, and others connected with the Scientific Committee.

Soon after the acquisition of the Library, a manuscript catalogue of the books was prepared with great care by Mr. ALFRED BENNETT. It consists of an interleaved copy of PRITZEL'S *Thesaurus*, which has been kept posted up to date, and which will still be of value as indicating the shelves upon which particular books may happen to be. On the removal of the Society from South Kensington to 117, Victoria Street, the library was for the first time properly housed. The want of a permanent librarian, responsible for the books and for their good order, was painfully felt. According to the deed of trust, the Society is empowered to appoint a librarian, as the means at the disposal of the trustees are not adequate for that purpose. For a long while the Society's financial condition was also not sufficiently satisfactory to secure the exclusive services of a librarian, except in a fitful and imperfect manner.

We may trust that now, when the Society is in a flourishing state, and the library is in better order than it has ever been before, no pains or reasonable expense will be spared to keep it so, and to employ a competent librarian for the purpose.

The want of a catalogue available for use by the Fellows at large has been long felt, and subscriptions have been received from a small number of the Fellows for the purpose of defraying the cost of its preparation and production. The Society and the trustees have also contributed, as far as their means have permitted, and the result is, that now at length a proper catalogue has been published. We can testify to the fact that great care and pains have been taken to render this list complete, and to avoid errors. It would be vain to hope that perfection has been obtained in this matter, but we may confidently trust that the errors are neither numerous nor of a serious character.

The additions made by the trustees to the original nucleus have been considerable, and some of the Fellows, following the example of Her Majesty the QUEEN, have from time to time presented valuable works to the library. The number of volumes in the old library was two thousand and five-hundred. The present library is estimated to contain nearly four thousand. Unfortunately, the present library does not comprise several expensive standard works, which together with unique collections of drawings formed part of the older collection, and the loss of which is to some extent irreparable.

The leading object of the trustees of the Lindley Library has, we believe, been to secure for the use of the public and of the Fellows valuable books of reference, illustrated works, and such as from their costliness or other causes are not likely to form part of the contents of a private library. Periodicals and many current

magazines have also been kept for reference. The preparation of the catalogue has, as we have said, revealed the want of certain standard books which ought to find a place in

intended for students' use. Young gardeners will more and more have to improve their brain-powers, and supplement the manual experience and dexterity they gain for themselves

works written in that language, and therefore not accessible to everyone. The fact is, that Germany turns out a far larger proportion of valuable text-books than does this country.



FIG. 127.—BEGONIA GLOIRE DE LORRAINE, IN THE GARDEN OF THE RT. HON. J. CHAMBERLAIN, AT HIGHBURY, BIRMINGHAM. (SEE P. 440.)

such a library, and which it is to be hoped may be supplied by the generosity of the Fellows. Whilst the library is mainly a reference library, the circumstances of the times demand that provision should also be made for the acquisition of the very numerous manuals and text-books

by availing themselves of the guidance and experience of others as recorded in horticultural literature.

Considering the progress of science in Germany, it is not surprising that a large proportion of the more recent accessions have been of

How it is done, how the finances are found to produce such books, how a sufficient number of customers can be found to buy them, are perpetual sources of wonder to us. In any case, horticultural literature in this country is too exclusively confined to elementary manuals,

and to books which are often mere compilations. Standard books of original research are scarce, and this must be the reason for the comparative rarity in the library of first-class horticultural books written in English. With botanical books the case is different, and the discrepancy is not so obvious. The library is also weak in old books—books that constitute the history of horticultural practice and botanical science. Dr. LINDLEY, as a working botanist, and pre-eminently a man of action, did not spend much time in studying old folios or pre-Linnean publications. For him the possession of works of more current interest was more important than the acquisition of volumes of merely historic interest.

Of late years, however, it has become apparent that the study of the "Fathers" has been unduly neglected. They have been overshadowed by the achievements of modern writers, and cast into the shade by the introduction of more perfect methods of investigation than they ever possessed. But for historical purposes the older books are invaluable, as furnishing evidence on the introduction and gradual evolution of numerous species and varieties. To this end, we may in future hope to see this department of the library considerably extended.

In any case, we think the Trustees and the council of the Royal Horticultural Society have earned the thanks of the community by the publication of this catalogue, which is practically the only one of the kind in the country so far as horticulture is concerned.

The Workmen's Compensation Act, 1897. THE following communication upon an important matter concerning nurserymen's and florist's employés has been sent to us for publication by Mr. CHARLES BUTCHER, solicitor to the Nursery and Seed Trade Association:—

"As this Act affects persons engaged in the nursery and seed trades who may have warehouses and employ their own men to do repairs, or have goods loaded or unloaded therefrom or thereto by machinery, attention is drawn to the following provisions of the Act and other Acts incorporated therewith.

The 7th section of the Act provides that 'the Act shall apply to employment on, or in, or about a . . . factory . . . and to employment by the undertakers as thereafter defined, on, in, or about any building which exceeds 30 feet in height, and is either being constructed or repaired by means of a scaffolding, or being demolished, or on which machinery driven by steam, water, or other mechanical power, is being used for the purpose of the construction, repair, or demolition thereof.'

'Factory' is to have the same meaning as in the Factory and Workshops Acts, 1878 to 1891, and includes any warehouse, machinery, or plant to which the provisions of the Factory Acts are applied by the Factory and Workshops Act, 1895.

'Undertakers,' in the case of a factory, mean the occupiers thereof within the meaning of the Factory and Workshops Acts, 1878 to 1895.

'Workmen' includes every person who is engaged in an employment to which the Act applies, whether by manual labour or otherwise, and whether his agreement is one of service or apprenticeship or otherwise, and is expressed or implied, is oral or in writing.

'The Factory Act, 1895, sect. 23, provides that 'certain provisions there specified of the

Factory Acts shall have effect as if every . . . warehouse, and so far as relates to the process of loading or unloading therefrom or thereto, all machinery and plant used in that process . . . were included in the word Factory. For the purposes of enforcing this and other sections of the Factory Act, 1895, the person having the actual use or occupation of a . . . warehouse, and the person so using any such warehouse, shall be deemed to be the occupier of a factory.'

The Acts of Parliament do not contain any definition of the word 'warehouse,' but I am of opinion it includes not only warehouses at docks, but all warehouses used for storage of goods for sale, and warehouses attached to stores and shops, particularly if plant and machinery, such as a crane and gas-engine is used for loading or unloading goods. The word 'plant' has been defined by the present Master of the Rolls in the case of *Yarmouth v. France*, L. R., 19 Q. B. D., p. 647, decided in the Court of Appeal to include whatever apparatus is used by a business man for carrying on his business."

**** OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle* Almanac for the Year 1899. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for the coming year.

BEGONIA GLOIRE DE LORRAINE AT HIGHBURY.—Enough has been said from time to time in the *Gardeners' Chronicle* to enable its readers to form an idea of the scale on which first class horticulture is carried on at Highbury, the residence of the Right Hon. JOSEPH CHAMBERLAIN. The corridor, a long and commodious structure at this place is interesting and picturesque at all seasons, owing to the quantity of choice flowering creepers and other plants. Among the many subjects to be seen in bloom recently was *Begonia Gloire de Lorraine* (fig. 127), almost filling one of the houses, the plants being mixed with *Asparagus plumosus*, *Lygodium scandens*, and *Adiantums*. Mr. DEACON cultivates this variety of *Begonia* in pans of small dimensions, and allows the shoots to hang over the sides, and without any aid from sticks or ties. *Begonia Gloire de Lorraine* requires to be grown constantly in heat and in peaty soil, and a small quantity of loam and sand sufficient to make the soil open, and the cuttings are struck in the month of April and May. *G. Burrows*, *The Dell*, *King's Norton*.

LINNEAN SOCIETY OF LONDON.—December 1, 1898.—Dr. A. GÜNTHER, F.R.S., President, in the chair. The minutes of the last meeting having been read and confirmed, the President alluded to the death of Professor ALLMAN. He was an earnest and successful investigator of the fauna of British marine Invertebrates, and his contributions to our knowledge of Freshwater Polyzoa and Gymnoblestic Hydroids, although published respectively forty and twenty-five years ago, are still used as standard works. But it is on nearer and more personal grounds than we claim to give expression to our sympathy. Professor ALLMAN occupied the presidential chair of the Linnean Society for seven years, from 1874 to 1881; and even after he had retired from the central sphere of the scientific world to the quiet pursuits of a country life, he continued to show his friendly regard for the Society by making valuable additions to our library, and by presenting us with the admirable portrait, which is one of the ornaments of this room. That portrait will remind many of those who are present to-night of the honest face, of the genial, yet manly ways which gained to him the confidence of all who came in contact with him.

Professor J. B. FARMER exhibited and made remarks on some Galls on the roots of *Agrostis alba*, and with the aid of lantern-slides demonstrated their mode of formation and development.

Mr. J. E. HARTING exhibited photographs of wild goats from certain islands of the *Ægean* Sea, with the object of throwing light upon the question of their specific identity. The president referred to the small amount of change that had taken place between the wild and domesticated breeds of goat, and to the fact that feral individuals, Irish and Welsh, sometimes developed horns approximating in size and character those of the wild type.

Mr. THOMAS CHRISTY, F.L.S., exhibited a living plant of *Begonia venosa*, Skam, which had been raised from seed procured by Prof. LÖFGREN on an island near Fara, and pointed out some of its peculiarities.

Mr. R. H. BIFFEN read a paper on the "Biology of *Agaricus velutipes*, Fr." Pure cultures of this fungus were grown on blocks of sterilised Horse Chestnut-wood kept moist with wads of cotton-wool soaked in water, under varying conditions of aëration and illumination. Four weeks after infection minute sclerotia were produced analogous to those found in some other species of *Collybia*, e.g., in *C. tuberosa*. From these one or two sporophores were formed directly, similar, except in size, to those found in Nature. They dry up in a week or two, and appear to be dead, but then produce a second crop of sporophores, which may in turn produce others, either from the pileus or stipes. It is therefore suggested that the great reduction in the sclerotia is to be correlated with this mode of vegetative reproduction, the sporophores themselves being able to function as sclerotia under certain conditions. On tracing the development of the sporophore, it was found that the gills were exposed from the first, and that the only approach to the formation of a *velum parziale* was afforded by the hairs of the recurved margin of the pileus pointing towards the stipes. It is thus completely gymnocarpic. A "conducting-system" was found running through the stipes and lower part of the pileus into the gills, where it ended in bulbous dilations, or in the cystidia. The hyphæ of the cortex of the upper part of the pileus turn outwards, and give rise to three distinct sets of hairs. As no evidence could be found for the formation of mucilage by these, it was suggested that the sliminess of the pileus is due to a quantity of water being held among them by capillarity. Microscopic examination of a series of infected blocks showed that the mycelium first formed in the wood-elements became broken up into oidia, which quickly germinated, and so gave rise to a large mycelium. The destruction of the wood is due to the corroding out of definite tracts in the cellulose walls of the thickening layers of the wood elements. The lignin of the middle lamella is left unaltered even in much-diseased wood. If, however, xylose-yielding substances are extracted from the blocks before infection, the lignin is attacked; although if the extracted blocks are treated with a dilute solution of cane-sugar, the hyphæ again attack the cellulose only.

—The next meeting of this Society will be held on Thursday evening, December 15, at 8 p.m. precisely, when the following Papers will be read:—Mr. H. J. ELWES, F.R.S., F.L.S., "Sketch of the Zoology and Botany of the Altai Mountains." Mr. THOMAS SCOTT, F.L.S., "A Description of some Marine and Freshwater Crustacea from Franz-Josef Land, collected by Mr. W. S. BRUCE, of the Jackson-Harmsworth Expedition." Exhibitions: Capt. JOHN MARRIOTT, Two rare Crustaceans from the Sinai Peninsula.

THE FELLOWSHIP OF THE ROYAL HORTICULTURAL SOCIETY continues to increase. Including those elected on Tuesday last, there have, we understand, been 600 new names added to the roll during the year now closing.

LÆLIAS AND CATTLEYAS.—Professor HENSLow, on Tuesday last, in his lecture at the Drill Hall, drew attention to the many points of similarity that exist betwixt *Lælias* and *Cattleyas*, and to the ease with which they have been crossed with each other. The fact that in one case there are four pollen-masses, and in the other eight, was not considered sufficient to justify a generic difference in the classification.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Scottish Horticultural Association, through their Treasurer, Mr. A. MACKENZIE, have forwarded a donation of £15 in aid of the funds of this institution.

"THE BOTANICAL MAGAZINE."—The volume for 1898 has been dedicated by Sir JOSEPH HOOKER to our valued correspondent, Mr. W. BOTTING-HEMSLEY, F.R.S., who, it may be remembered, contributed several articles relating to the history of this publication in our own columns, p. 389, vol. xix., and p. 651, vol. xx., 1896. The dedication is in the following terms:—

To WILLIAM BOTTING HEMSLEY, F.R.S., F.L.S.,
Principal Assistant, Herbarium, Royal Gardens, Kew.

MY DEAR HEMSLEY,—I have three reasons, each sufficient, for offering to you the dedication of a volume of the *Botanical Magazine*, firstly, as a record of the interest you have shown in this work, and an acknowledgment of the valuable aid I have received from you in conducting it; secondly, the amount and importance of your labours in systematic and geographical botany, as especially evidenced by your great works on the *Flora of Central America*, and on the *Botany of the "Challenger" Expedition*; and lastly, my wish that you should accept this dedication as the tribute of a friend to a collaborator for upwards of thirty years in the Herbarium of the Royal Gardens.

Believe me, with esteem and regard, faithfully yours,
J. D. HOOKER,

The Camp, Sunningdale, Dec. 1, 1893.

SCIENCE AND LABOUR.—Sir JOSHUA FITCH, speaking recently at the annual distribution of prizes and certificates at the Norwood Technical Institute, West Norwood, said, as reported in the daily press, that every kind of labour had some kind of science at the root of it. It was rather a disgrace to an intelligent man to be every day handling materials, the properties of which he had never taken the trouble to examine, the history of which he knew nothing about, and the capabilities of which he could never understand without some kind of scientific knowledge. He was delighted to see that a feeling had now grown up among the English people, that it was absolutely essential that we should have a thorough scientific training if we were to hold a high rank among the nations in the department of industry.

GEORGE BENTHAM.—The December number of the *Annals of Botany* contains a portrait of this most eminent botanist, together with a sympathetic account of his career, from the pen of his colleague and life-long friend Sir JOSEPH HOOKER.

DR. KARL FREIHERR VON TUBEUF, of the Munich University, has been appointed Director of the Botanical Section of the Biological Department of the Imperial Sanitary Office, Berlin. The post vacated at Munich by this transference of Dr. von TUBEUF will be filled by Dr. J. E. WEISS, Professor in Friesing, and Instructor in Botany at the Royal Academy of Knowledge in that city.

THE CHELSEA PHYSIC GARDEN.—At a meeting of the Royal College of Physicians, held on Dec. 1, and reported in the *British Medical Journal*, a Report of the Committee on the Charity Commissioners' scheme for the Physic Garden at Chelsea was read. The scheme proposed the maintenance of the garden, the provision of laboratories, of facilities for instruction, and the appointment of a curator. It proposed also to appoint a committee of management, consisting of fifteen persons, of whom eight would be appointed by the trustees of the London parochial charities, one by the Royal Society, and one by the Royal College of Physicians and the Apothecaries Society alternately. Dr. HEMSLEY proposed to reply requesting that the Royal College of Physicians and the Society of Apothecaries, which had maintained the garden for many years, should have the same representation as the Royal Society. The President (Sir S. Wilks) observed that the gardens had been founded by a former President of the Society, Sir HANS SLOANE, and that it seemed only proper that the College should have a permanent representative on the committee of management.

STOCK-TAKING: NOVEMBER.—The balance of the foreign trade account, it is pleasant to note, continues on the right side. The excess over the same

period last year in both imports and exports may not be great, but there is "something to the good," the mysterious ways of diplomacy notwithstanding. As to the—

IMPORTS.

The Trade and Navigation Returns for November place these at some £42,069,569, against £41,166,146 for the month of November, 1897—or a gain of £903,423. Our usual excerpt from the "summary table" for the month is as follows:—

IMPORTS.	1897.	1898.	Difference.
Total value ...	£ 41,166,146	£ 42,069,569	£ +903,423
(A.) Articles of food and drink—duty free ...	14,312,833	14,532,379	+2 9,546
(B.) Articles of food and drink—dutiable	2,819,912	2,843,111	+23,199
Raw materials for textile manufactures ...	7,829,327	7,805,385	—23,942
Raw materials for sundry industries and manufactures	4,078,164	4,127,950	+49,786
(A.) Miscellaneous articles ...	1,491,941	1,637,147	+145,206
(B.) Parcel Post ..	106,957	97,367	—9,590

The vagaries in the various sections may be briefly noted as follows:—In manufactured articles, machinery figures for an increase of over £200,000—an increase which we do not admire. Wheat, principally supplied by the United States and Canada, has been less by £1,214,552—or 2,115,050 cwt. On the other hand, Barley from Russia and Roumania show an increase of 1,499,400 cwt., of the value of £432,941. Maize from Argentina and the United States of America gained by 1,834,640 cwt., the value of £418,184. Bacon and hams went up by £230,449. Concerning sugar, the imports from France fell off very much (Nov., 1898—5,960 cwt.; 1897—409,371 cwt.), but those from Germany showed a marked increase (Nov., 1898—436,635 cwt.; 1897—443,811 cwt.). Coming now to dutiable articles, the figures, £121,504, denote the increase in imports of wine. Cocoa shows an increase of £48,383, and Coffee a decrease of £68,997. Manufactured copper increased by £105,222, but tin was less by £30,330. It is worthy of note that cotton went up by £276,213, hemp by £115,926. Wool, however, from Australia, was less by £327,599; india-rubber, increased by £302,350; gutta-percha by £36,913. Timber fell off by £405,766. In seed, Flax jumped up by £150,936. Now, as to the eleven months' imports, we find them valued at £425,346,792, against £409,832,201 for the corresponding period in 1897—an increase of £15,514,591. At this season of the year, "when the song of the grocers is heard in the land"—an increase in our little table of imports of fruit, roots, and vegetables, is very permissible, and is as follows:—

IMPORTS.	1897.	1898.	Difference.
Fruits, raw:—			
Almonds ... cwt.	27,444	36,151	+8,707
Apples ... bush.	783,300	311,786	+28,488
Grapes ... "	122,341	199,470	+79,129
Lemons ... "	116,168	109,122	—7,046
Nuts ... value	£89,294	£157,183	+£67,894
Oranges ... bush.	621,475	742,718	+121,243
Pears ... "	46,674	47,092	+418
Plums ... "	884	1,194	+310
Unenumerated, raw "	63,670	108,804	+45,134
Onions ... "	485,530	665,631	+180,101
Potatoes ... cwt.	834,005	130,680	—703,325
Vegetables, raw, unenumerated ... value	£63,041	£112,612	+£49,571

Add to these the enormous stores of Currants, Raisins, candied peel, and spices, and we arrive at the conclusion that, with the exception of Potatoes, the figures are very satisfactory for Christmas-keeping folks; and taking them in connection with the imports of poultry from all the usual sources of supply, promises a grand total of these delicacies (!) which go to make up good cheer for the million amongst the juveniles, and employment for the medio. And now, and finally, as to the—

EXPORTS.

The total for November is summed up in £19,820,207, against £19,773,594 for the corresponding period in last year—an increase of £46,613—a mere "bagatelle," but better than nothing. It is well worth noting that the engineers are doing their best to make up for the strike loss—the increase in machinery and millwork footing at £487,636; and coal shows an enhanced value of £294,214. Iron manufactures fell away by £324,576—copper going up £56,408. There is a gain in miscellaneous articles—£89,425. As to the tale for the eleven months, there is a decrease of £2,635,438—the figures for 1898 being £212,412,384, against £215,047,822 for 1897. As a concluding remark, the working of the Canadian Preferential Tariff is favourably reported on by the Dominion authorities—the gain being perceptible on both sides of the Atlantic.

A GREAT GRAPE CLASS.—The conditions attached to the great International Grape class at Shrewsbury, which will be published in the Shropshire Horticultural Society's schedule for the exhibition in August next, have, after much general criticism, been settled definitely, and the large sum of £100 has been divided into six prizes of the value of £26, £24, £20, £15, £10, and £5; but the committee will instruct the judges that, should there be exhibits beyond these of worthy nature, to make two other lesser awards, or practically to award eight prizes. These latter might suffice to cover expenses, if they did nothing else. The class is for twelve bunches, in six varieties, and each pair of bunches must be placed on single boards; then, because the table-run is restricted, the boards will have to be ranged in two tiers, the tables being specially constructed for that purpose. Besides this, for the first time at Shrewsbury in connection with a purely Grape class, small foliage plants and loose or draping foliage will be used to give pleasing decorative effects, but flowers may not be employed. In making awards, judges will be required not so much to consider flavour (as that element, so early in the season, may not be fully developed) as the evidence furnished in the bunches of superior cultivation and finish, which it is hoped will include proper thinning, size, and evenness of berry, contour of bunch, colour, and bloom; mere size or weight of bunch being of very secondary importance. Altogether this remarkable Grape class should bring together for once the finest Grapes the world can produce.

DURHAM, NORTHUMBERLAND, AND NEWCASTLE-ON-TYNE BOTANICAL AND HORTICULTURAL SOCIETY.—We are requested by Mr. J. B. REID, who has succeeded Mr. J. J. GILLESPIE, Jun., in the secretaryship, to state that the offices of the society have been transferred from Cross House Chambers, 54, Westgate Road, to Mosley Chambers, 30, Mosley Street, Newcastle-on-Tyne.

THE FATE OF AN INTERESTING GARDEN.

That enthusiastic gardener, Mr. GEORGE WILSON, of Heatherbank, Weybridge, writes:—"A very eminent scientist, who recently died at Parkstone, near Bournemouth, had been for some years a devoted and successful gardener, and had a collection of very interesting and rare shrubs, which flourished in the mild climate of the district. It was a great pleasure to see him in his garden, and at the age of 86 he remembered most of the names without having to refer to the labels. A great traveller and author, also a very successful gardener, who lives close by Ardmore, writes me, 'Dr. ALLMAN'S house and garden will soon be for sale; try and get some good gardener to buy it, it is full of rare and fine things.' To any old gardener wishing for a nice house and attractive garden in a mild climate, this would give a good chance, and to my friend a congenial neighbour."

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—The Floral Committee of this Society awarded at the meeting on November 9, 1898, First-class Certificates to Mr. Jac. C. Groenewegen, of Amsterdam, for *Chrysanthemum* Edwin Bethge, G. Madame Boudoin, C. Madame H. de Vilmorin, C. Mrs. T. A. Compton, and C. The Egyptian. To Mr. T. E.

Houtvester, of Utrecht, for C. Edwin Bethge, C. Mr. H. Tukker, C. Sarnian Gem, and C. Yellow Madame Carnot. To Mr. A. P. Bouwman & Son, of Arnhem, for C. Yellow Madame Carnot. To Messrs. E. H. Krelage & Son, of Haarlem, for Cactus-Dahlia Casilda, C.-D. Henry Ayres, C.-H. Laverstock Beauty, C.-D. Miss Finch, C.-D. Royal purple, C.-D. Stella, and C.-D. W. F. Frost. To Mr. W. C. Baron van Boetzelaer, of Maartensdijk, for Staurosis lissæchiloides. A Certificate of Merit was granted to Messrs. E. H. Krelage & Son, of Haarlem, for Cactus-Dahlia Octopus and C.-D. Pumila; and a Silver Medal was awarded to Mr. J. G. Ballega, of Leiden, for a collection of *Cattleya labiata autumnalis*. H. C. Zwirt, Secretary.

THE PRINCELY GARDENS AT SCHLOSS DYCK.—The celebrated collection of plants at this place which owed its existence to that famous and learned lover of plants, the late Prince JOSEPH SALM, has been scattered, and Herr Hernies, the gardener who had the care and management of the gardens for twenty-seven years, is to be pensioned in April next. He will be succeeded by Herr Xaver Rohde.

OUR FOREIGN FRIENDS.—In the 20th number of *Le Chrysanthème*, although dated October, is a brief report of the great Chrysanthemum exhibition at the Aquarium from November 8 to 10. M. SALÈTES, it appears, was a welcome guest, as every horticulturist, of whatever nationality would naturally be on such an occasion. M. SALÈTES expresses his surprise at the cordiality of his reception. It would greatly conduce to the advantage and pleasure of all concerned if more of our French colleagues would do us the honour of paying us a visit. They would find, that so far from entertaining any hostile feeling, the people of this country have no stronger wish than to be on good terms with their neighbours, whilst so far as horticulture is concerned, the distinctions of nationality are hardly more recognized than in the case of science, which NAPOLEON is reported to have said, has no nation. Mr. HARMAN PAYNE seems to have acted the part of a patriotic Englishman in extending the hospitality of the Chrysanthemum Society to M. SALÈTES.

BRITISH WEIGHTS AND MEASURES are used by some 113 millions of people in Great Britain and Ireland, Canada, Australia, Cape Colony, New Zealand, and the United States of America; and the time, money, and patience lost to that enormous number of human beings, most of whom esteem themselves rational, is simply incalculable. The 329 millions of people who habitually use metric weights and measures save time in all their calculations; they also save trouble through being able to perform mental calculation more easily; and the interrelation of their standards affords them a great advantage over us. *Pharmaceutical Journal*.

PRICKLY PEARS IN NEW SOUTH WALES.—A recent issue of the *Agricultural Gazette of New South Wales* contains an important paper, with numerous illustrations, by J. H. MAIDEN, on the "Prickly Pears Naturalised in the Colony." The subject is briefly summed up thus by the author:—"The principal indictments against the Prickly Pear are: 1. It frequently occupies good soil. 2. The profusion of spines of some species, which prevent cattle browsing on it, or man dealing with it, the plants thus become a harbour for vermin. 3. The abundance of seeds it produces, which, being eaten by birds and animals, are disseminated through their agency. I have heard it stated that imperfectly-ripe fruits are a far more certain source of reproduction than perfectly ripe ones. 4. The vitality of the plant. When joints are broken off they readily take root in most parts of the colony during the greater part of the year. Having said all the harsh things we can against the Prickly Pear, let us see what we can say in its favour: 1. Some species can be utilised as food for stock. 2. Some species yield fruit, of which many people are fond. They should be gathered with gloves, and the bristles rubbed off with a napkin. 3. Some species form fire-proof and cattle-proof hedges. In some parts of the United States

they are used to fence in railways. 4. They are very desirable for horticultural purposes, both for rockeries and for scenic effects in gardens generally." The various species alluded to above are *Opuntia ficus indica*, *vulgaris*, *tuna*, *monacantha*, *stricta* (inermis), and *brasiliensis*. None of them is indigenous, but having been introduced at different times, they have flourished and increased to an enormous extent, so that the mischief caused by them far outweighs their value. The importance of the question may be gathered from the rigour of the Prickly Pear Act, under the provisions of which, "a citizen failing to comply with the regulations is liable to a fine of £20." Total eradication of the pest by burning or deeply burying it is required, and has been tested; while, as an alternative, puncturing and spraying the plants with "scrub exterminator" powder has been tried. For details of these experiments reference must be made to the *Gazette*, where, in the paper under discussion many interesting facts are given of the history of the *Opuntias* in the colony and elsewhere, together with several good illustrations.

"LIVE STOCK JOURNAL AND ALMANAC" (9, New Bridge Street, Ludgate Circus).—An annual, indispensable to the breeder of horses, cattle, and stock generally.

PLANT PORTRAITS.

DODECATHEON, NEW VARIETIES OF; *Revue Horticole*, Dec. 1. EPIACTIS GIGANTEA, terrestrial North American Orchid, *Mechanics' Monthly*, October. INCARVILLEA DELAVAYI, Bignoniaceæ, a hardy or half-hardy perennial of great beauty and special interest, *Garden*, November 26. LILIUM RUBELLUM, *Garden*, November 19. See *Gardeners' Chronicle*, 1898. METROSIDEROS ROBUSTA, *Revue de l'Horticulture Belge*, December. ROSE, FERDINAND JAMIN, H. T., globular rose-coloured, *Rosenzeitung*, November. ROSE, GEHEIMRATH BOCH, T., pale primrose, flushed, with red centre, pointed in the bud, *Rosenzeitung*, November. ROSE MADAME JULES GROLEZ, rose-coloured, *Garden*, December 3. VRIESIA VIGIERI X, *Revue de l'Horticulture Belge*, December, a cross between V. Rodrigueziana and V. Rex.

THE PRINCIPLES AND PRACTICE OF BULB-GROWING.

(Continued from p. 422.)

A VERY interesting and useful method, which is adopted in the propagation of the Hyacinth, consists in making two or three longitudinal slits across the under-side of the bulb, i.e., in the rudimentary stem, after removal from the ground. When placed on the shelf to dry, it is not long before numbers of tiny young bulbs are formed at the margins of each slit. Another means employed for gaining from each bulb a much larger number of offspring than is produced by nature in the soil, is that of scooping the bulb on the under-side, so that a large bowl-like cavity is formed, lined with the cut transverse surfaces of the fleshy scales. At the margins of these surfaces sprout very numerous young bulbs of very small size, representing so many tiny individual plants; these are all separated and grown apart in the autumn. It is well to study the *raison d'être* and learn the biological significance of the production of young bulbs by these processes.

When a plant or part of a plant is wounded in any part of its tissues, it immediately sets to work to heal the wound which has been made; and this is effected by renewed growth on the part of the tissues immediately adjoining the injured part, so as eventually to cover over the wound by a protective callus. Some plants, but by no means all, have the power of producing, under certain conditions, offspring from nearly every organ, especially from the leaves; the instances of some Ferns, Begonia, *Curculigo* (fig. 128, p. 443), *Streptocarpus*, occur to us. If an incision be made in a detached leaf of a Begonia lying on damp soil or sand,

an entire new plant or plants will be formed at the margin of the incision. Numerous cases of natural adventitious budding will occur to us. This same power is possessed by bulbous plants. We have already seen how entire new individuals may be formed from ordinary branches of the stem in the ordinary natural method of bulb-propagation (see illustration of *Narcissus*, fig. 129, p. 443). That is a not uncommon phenomenon, for we know that very many plants have the power of forming new individuals from their branches or portions of their stems, as in cuttings. In the first-named slicing method of Hyacinth propagation, it is the stem which is chiefly affected, hence we see here a case of adventitious budding from the stem of the same nature as the phenomenon of multiplication by means of cuttings. In the second-named method, however, that of "scooping" and "notching" (see figs. 130, 131, p. 443), it is the foliar organs, the scales, equivalent to ordinary foliage leaves, which are affected, and hence we find here the same phenomenon of the production of new individuals from the leaf as in the Begonia, for the tiny bulblets are formed all round the cut edges of the scales.

Now, in all these cases of adventitious budding, as the result of wounding in some way or other, the energy which in ordinary cases of wounding is used solely and simply for the healing of the injured part by the formation of the simple callus-tissue, is in those cases which we have had under consideration, as well as in others, directed towards the building up of a new individual, with all its complex, differentiated tissues. For these cases are generally those of fatal wounding of the plant or organ, in which the possibility of renewed life and growth is precluded for ever. And then the instinct of the plant asserts itself in the endeavour to create a numerous progeny capable of continuing the thus violently interrupted life-cycle—just as the production of great quantities of spores is induced in many fungi and algæ when unfavourable outward conditions prevent a continuance of their normal vegetative growth. Very fortunate and convenient for the bulb-grower is this habit of economy and desire for offspring on the part of the plant.

This same faculty in the plant of producing new individuals from the vegetative organs by adventitious budding is seen in some of the Lilies (see fig. 132, p. 443). We used to propagate *Lilium auratum*, the beautiful Japan Lily, in part, by pulling some of the bulbs to pieces and sowing the separate scales in sand, for each scale is capable of producing a new plant from its injured basal end, when thus detached and isolated from the bulb; offering, in fact, a similar instance to that of the Begonia and *Streptocarpus*-leaf, and compensating, by this rejuvenating process for the entire destruction of the parent bulb.

The main reasons for the annual removal of the bulbs from the soil, and storing them until the planting season again recurs, are the following:—The young bulbs can then be detached and sorted from the others; the bulbs are secured thereby from the dangers of mice, and from accident from rain or drought; the decaying or unhealthy scales and roots can be removed, allowing a freer circulation of air, and freedom from infection by bacteria to the remaining parts of the bulb, and a longer rest and respite from growth is allowed to the bulb than they would get if left in the ground, and have a likelihood of their more profuse flowering next spring.

A method of cultivation of Hyacinth-bulbs,

familiar to every lover of flowers, demonstrates clearly the nature and function of the "bulb" as the storehouse of all the food substances necessary for the production of the leaves and the flowers. This is the practice of growing the bulbs in glass vases of water, so that the latter just bathes the base of the bulb, when long roots can be seen growing out and downwards through the transparent liquid. The uninitiated will sometimes wonder, doubtless, how the bulb can thus throw up leaves and flower-spikes without any soil around it, being acquainted

salts in solution which are needful for the growth of the flower and foliage. So far, however, and no further, can this pretty method of water-culture proceed. For the permanent growth of the bulb under such conditions would be impossible; because the water, unless it were specially prepared for the purpose, cannot supply all the requisite salts so essential to the plant, which are found in the soil. If sufficient skill, labour, and patience were afforded, however, water-culture would be quite possible; at least, for a certain length of time, as an

HOME CORRESPONDENCE.

ORCHARDS ON GRASS.—That there are grasses and grasses, as well as trees and trees, for orchards, is well known to experienced cultivators. It would be going too far to affirm that the selection of the grasses was of equal importance to the choice of the trees; though most growers will agree with "F. R. H. S.," on p. 377, that the character of the grass is of great moment. The grass virtually, in fact, feeds at the same table as the trees. Surface-rooting grasses thus compete for food with the roots less directly and less strongly than deeper-rooting grasses. The so-called natural grasses—that is

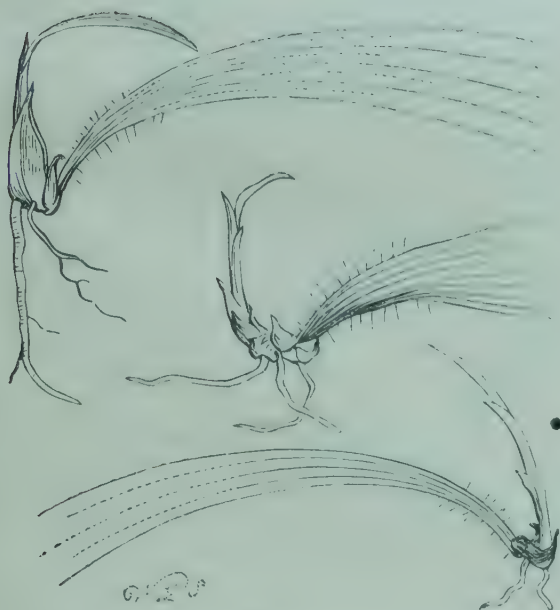


FIG. 128.—PLANT ARISING FROM A BUD ON LEAF OF CURCULIGO.



FIG. 129.—METHOD OF NATURAL INCREASE OF BULBS IN NARCISSUS.



FIG. 130.—A METHOD OF HYACINTH-PROPAGATION BY NOTCHING THE BASE OF THE BULB.

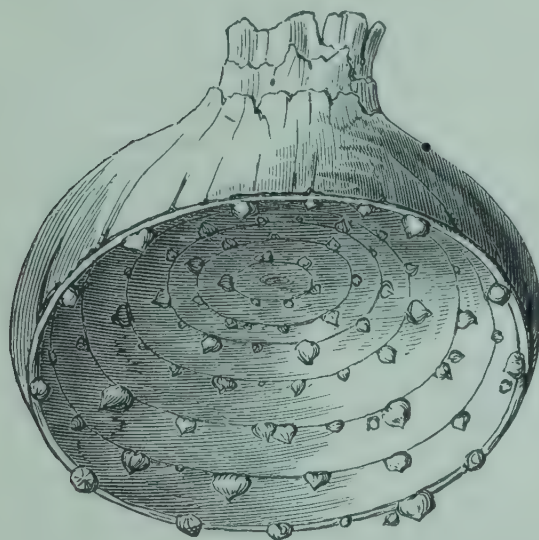


FIG. 131.—A METHOD OF HYACINTH-PROPAGATION BY SCOOPING OUT THE BASE OF THE BULB.

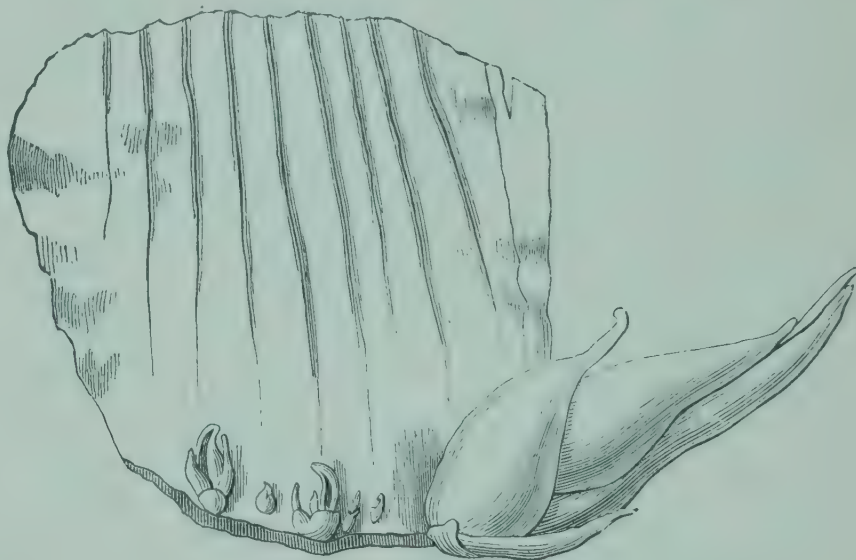


FIG. 132.—NEW BULBS ARISING FROM A BULB-SCALE OF LILY.

with the fact that bulbs are usually grown under the garden-mould. But to the interested grower who understands something of the common laws of plant-life, and the functions of the various organs of a plant, before commencing the attempt of the successful cultivation of an organism like a bulbous plant, the case is fairly simple, and easy of explanation. For the bulb contains within its own thick fleshy scales nearly all the nutriment necessary for the development of the aerial flowers and leaves, whose rudiments are already laid down within the heart of the bulb. The roots supply the water, which will also contain a few of the

interesting hobby and experiment; but for all practical purposes it would be useless, and is quite contrary to Nature.

In conclusion, I would say that bulbous plants, like other members of the vegetable kingdom, are to be treated under cultivation in accordance with their peculiar organisation, structure, and habits, and I am convinced that the perfection of horticulture will alone be attained when an interested and familiar knowledge of the structure and life-histories of plants is united to a thorough and practical acquaintance with their treatment in the garden under cultivation. *W. C. Worsdell.*

those which spring up spontaneously, or thrive so well under given conditions as to over-run or smother out all others—furnish useful data as to the physical characteristics and productive capacities of soils, and useful hints to the cultivator. Though, for the nonce, the planting of orchards on grass is out of fashion, this time-honoured practice may be revived, and is likely to be so when as much attention is devoted by our seedsmen to the selection of grasses for orchards as for forming garden lawns. The "velvet-pile" of the latter is far more difficult to maintain as a profitable green surface-rooting sward under our fruit trees of moderate and uniform growth. But the future treatment of the turf or grass of orchards is hardly of secondary importance to the selection of the grasses for laying its solid and lasting foundation. No one doubts the truth of the

well-worn proverb, "All work and no play, makes Jack a dull boy," and yet all taken out and nothing put in is the true epitome of the management of many an orchard under grass. A heavy crop of hay, perhaps an aftermath of considerable bulk, and besides, a crop of fruit from the trees, such is the burden year by year. In my technical lectures on "Fruit Culture," nothing seemed to astonish the audiences so much as to be told that Apples, Pears, Plums, Cherries, all fruits, needed to be fed as well as ourselves, if they were to live long in good health and in full fertility. As a result of some of these lectures, it was hopeful and yet almost pitiful to find a forkful or two of dung placed firmly against the bole of the trees as a nose-bag of corn over a hungry horse's head. Shortly after I was challenged to an out-of-door demonstration to prove that no food was wanted for fruit trees. This was in a Plum Orchard on grass, mostly Green Gages, perfect models of cleanliness, health, and fertility. The grass was green, even short, almost as that of a well-kept lawn, proclaiming itself sheep-fed to all who had eyes to see. On inquiry it was found that no one had seen this orchard under hay, nor even mown for green fodder. It was simply and constantly fed throughout the season, and there had been few days in the year when a sweet bite under the Plums could not be had for the sheep or early lambs. And the droppings of this well-conditioned flock were almost more than sufficient to feed the Plum-tree. My opponents had simply given their case away, and the top-dressings of orchards on grass began to multiply in number and expand in area. Still, with fruit trees with clear stems of 5, 6, or more feet high, and grass enough to satisfy the stock, there is nothing within the range of natural and artificial manures to equal in potency and efficiency a flock of sheep. The more in reason for a given area the better; for it is not so much the grass that injures the roots of the trees as the length of it. Hence, on no consideration should grass orchards be mown for hay; this not only impoverishes the ground, but cools, and not seldom sours it. We can compensate our orchards for the loss of our hay crops, but we cannot make up for the loss of light, air, and warmth through this overshadowing of the land by long grass; but on fully-stocked meadow land of good quality, very fine Cherries, Apples, Pears, and Plums can be grown. The great difficulty with large stock is the cost of tree guards; and another more modern difficulty is the danger to stock of spraying the trees, and, consequently, the herbage, with more or less poisonous insecticides and fungicides. When the cost and risks of both are duly considered, most planters will probably continue to prefer arable orchards of standard trees, with fruit bushes, Rhubarb, Strawberries, or light crops, say, of Lettuces, underneath the trees as being pleasanter and more profitable than those under grass. *D. T. F.*

NOTES FROM ISLEWORTH.—The season of 1898 has been remarkable for the terrible drought which began early in July, and lasted without any real break until the middle of October. The only permanent evergreens that withstood this period without showing signs of distress were the Cedars in general, *Pinus excelsa*, the Yews, Hollies, and Pampas-grasses. I believe that great injury has been done throughout this district to *Sequoias*, *Retinosporas*, and even Lawson's Cypress, and that the full extent of this damage cannot be judged until next springtime. There was generally a fine show of bloom on fruit-trees, but three days of continuous gales, snow, and rain, at the end of March, ruined the Apricots and damaged the Peaches. Blight and woolly Aphis abounded during June to an extent which I have never previously experienced. Such a season is, of course, unfavourable for any kind of gardening, and many exotic bulbs, which as a rule flower well with me in August and September, have failed to a large extent. *Lycoris squigigera* only produced about eighty flowering-spikes, or fewer than half the usual number; and *L. aurea* and *L. sanguinea* failed to produce any perfect flowers. The *Brunsvigias* were also very chary in flowering this summer, and the only genus which really did well was the *Amaryllis*. These flowered against an unheated garden wall, although I have often heard it stated that they will not flower in such positions in England except on the south coast. In the glasshouses, the year has not been very eventful. One magnificent *Crinum*, allied to *C. submersum*, flowered for the first time, but I find the whole of this section (the American "Ornææ," of which *C. scabrum* may be taken as the type) are difficult to cultivate. Among other rare *Crinums*, *C. pauciflorum*, and *C. fimbriatum* also flowered.

Placea ornata has been successfully established, and it flowered freely. *Hæmanthus puniceus* wintered unprotected at the base of the stove-house wall outside, and flowered very well about midsummer. I was also much interested in flowering the old *Hæmanthus callosus*, not that it is in any way beautiful, but because it was one of the bulbs cultivated by Burchell early in the century; and, from a gardener's point of view, there seems to be almost an historic interest in the re-introduction of these old treasures. Two small bulbs recently re-introduced to Kew from Uruguay, also flowered here this year—*Brodiaea* (*Triteleia*) *aurea*, and *Herbertia pulchella*. It is only when one possesses an ample stock that experiments are tried as to the degree of frost that will damage exotic plants. Among the *Amaryllideæ* I have found Old World species to endure several degrees more cold than those from similar latitudes in the New World. This year I left *Crinum Moorei*, *Brunsvigia* (in two species), and *Hippeastrum aulicum*, bedded out until late, and while their flowers were, in every instance, expanded, they withstood a night temperature of 32° (in the air) without any injury to the flowers expanded at the time. But this, I think, must be near the limit, because in other years I have had *Brunsvigia* in flower cut down by very few degrees of (air) frost, and *C. Moorei* also. On April 23 bedded *Cinerarias* in flower were not injured by a night temperature of 30° in the air. *Campanula pyramidalis* wintered outside unprotected and uninjured, and also several specimens of the Tree-frog from the Mediterranean regions. *A. Worsley, Isleworth, November, 1898.*

TOMATOS TRAINED SPIRALLY.—The cultivation of the Tomato is similar to all other branches of horticulture, seeing that the observant cultivator can always acquire a certain amount of knowledge regarding the best methods to be pursued with the plants. Each year brings new varieties, something new in methods of cultivation, some to be regarded as improvements, and others discarded as being useless or detrimental. My wish in the present communication is to explain some experiments made at Wrest Park during the past season with Tomato plants out-of-doors. The chief object was to show that the Tomato can be grown successfully in a garden border, or similar situation, without assistance from a wall. The plants, when trained spirally, do not grow so fast, the flow of sap being somewhat checked, and directed to the fruits. Another advantage this sort of training affords is, that towards the end of the fruiting season the cultivator will have fewer green fruits to ripen off indoors than under the old method. The two varieties experimented on during the past season were *Superam* and *Early Prolific*, both of which were raised from seeds sown at the same date, and planted out in their summer quarters on May 15, many of them being planted against the east, west, and south walls of the kitchen garden; and the remainder in the border away from the walls. Those planted in the open received support from fine stakes, and the training began with the first tying of the plants. During the summer the plants, one and all, received the same kind of treatment in regard to affording water, tying, nailing, and the pinching of lateral shoots. Towards the end of August a finer crop of Tomatos, grown in the open border, could not be desired; and those who saw the plants said that they had no idea that the Tomato was so productive without any aid from a wall, far surpassing those in the weight of the crop of fruit. *George Mackinlay, Wrest Park.*

HONOURS TO FRENCH HORTICULTURISTS.—I read in the *Gardeners' Chronicle* of November 26, that "Mr. Pinoteau has been created a Chevalier of the Ordre du Mérite Agricole for his services to horticulture, the honour coming to him upon the recommendation of the Minister of Agriculture of the Republic of France. It is the first time in history that this decoration has been bestowed upon a Frenchman whose work has been accomplished out of France." I wish to correct this mistake, as Mr. Schneider, President of the French Horticultural Society of London, obtained this decoration in the year 1896, for the same kind of services. *O. M.*

RIVINAS.—In the issue of the *Gardeners' Chronicle* for Dec. 3, Mr. H. H. Thomas, under the heading, "Some Neglected Greenhouse Plants," mentions, amongst others, *Rivina humilis* and *R. tinctoria*, and states that they would not be suitable for either house or table decoration, but for summer decoration in the conservatory. *Rivina tinctoria* I do not grow, but *R. humilis* is an excellent decorative plant for apartments and dinner-table. I grow it chiefly for

use in the winter season, and when it is not convenient to place the plant in its pot on the table, the branches are cut off and placed in little vessels filled with water or damp sand. Associated with well-coloured autumn leaves and sprays of *Ampelopsis Veitchii*, the effect is very pleasing. The plants thus cut down are grown on in the spring for forming large specimens. They are, as Mr. Thomas says, easily raised from seed; in fact, plenty will come up themselves if the mother-plants are stood on gravel or sand. Sudden changes of temperature should be avoided during growth, or loss of foliage will result. *Geo. E. Parr.*

BEGONIA GLOIRE DE LORRAINE.—I am not surprised that your correspondent, Mr. Grace, was struck with the beauty of the *Begonia Gloire de Lorraine*, exhibited by Mr. Allsop, gr. to Viscount Portman, at the Blandford Chrysanthemum show. This lovely plant will probably be a great favourite when better known. Too much cannot be said in praise of the *Chrysanthemum* as now exhibited, yet I think most persons will admit that masses of this flower shown quite unrelieved by any other, are just a little monotonous. Now this *Begonia* is just what is wanted as a contrast, and by careful management the plant will flower throughout the autumn and winter months. Nothing can exceed the beauty of the 300 plants in bloom in one large house in Bryanstone Gardens, each plant a perfect specimen, covered with graceful sprays of bright pink blossoms, relieved by the delicate green of the leaves. I have no doubt Mr. Allsop will be very pleased to show his plants to anyone wishing to see them. *H. Dudderidge, The Dorset Nurseries, Blandford.*

RAINFALL EAST AND WEST.—Anyone who has noticed the meteorological reports during the past few months must have remarked the wide difference between the rainfall in the east of England and the west. Here is the record at Penllergare, near Swansea, and at my own Vicarage in East Kent:—

At Penllergare.		Inches.	At We twell, near Ashford.		Inches.
August ..	...	4.89	August ..	...	1.38
September ..	...	2.19	September ..	...	0.64
October ..	...	7.94	October ..	...	2.07
		15.04			4.11

Of course I am aware that to a greater or less extent there is always this difference; but few, I think, are aware how great this often is. *Wild Rose.*

THE CLEANING OF TOMATO SEEDS.—Like most other things, the cleaning of Tomato seeds is simple enough when you know how. The difficulty is due to the presence of a gelatinous substance that adheres to the seeds, and prevents their sinking in water. It is this substance that fills the meshes of a fine sieve. A method which I have adopted for a dozen years is as follows:—Remove the seed from the pulp to a basin by the aid of a tea-spoon, and beat it up vigorously with the fingers. Afterwards pass the mass twice or thrice through water, and finally place it in a gravy-strainer, and remove as much of the gelatinous substance as possible, holding the seeds under a water-tap, wiping away the fluid beneath as it is pressed through. At this stage the whole is a jelly-like mass, and the seed inseparable by hand. It should now be turned out on to a piece of smooth board, and spread thinly with a knife. In a day or two the watery part of the mass will be absorbed more or less, and the seed fixed to the board. The mass, when dry, may be raised by pushing a knife under it, and the seeds separated by hand-rubbing. If fruits be left to rot in a low temperature not favourable to germination, the gelatinous part decays together with the pulp, and the seeds are readily cleaned. Partially ripe fruits have much less of this gelatinous substance. *E. J.*

LADYBIRDS AND APHIDES.—I was much interested in "H. C.'s" remarks (in your issue of the 3rd inst.) respecting the ladybird. It lives almost entirely on aphids of various kinds, a fact well known to Hop-growers. The larva also live on aphids, and was very numerous on our Chrysanthemums this year. It somewhat resembles a lizard in shape, and is about three-eighths of an inch in length. I have watched the development of the larva into the mature insect: the tail becomes shorter and more obtuse, until the body is nearly round; it then fixes itself to the leaf, and finally comes out of its covering a winged insect. The colour of the wing-case is somewhat dull at first,

but it soon attains its usual brightness. There are several more enemies of the aphid, viz., the larvæ of the wasp-fly (a formidable foe), the grub of the lace-wing fly, the Ichneumon fly, and wrens, &c. We hear a good deal of the destruction wrought by injurious insects among cultivated plants, but little is said of our insect friends. *Charles Barnett, Decker Hill, Shifnal.*

CHRYSANTHEMUMS IN SCOTLAND.—To me Mr. Brotherston makes a startling announcement on p. 409, where he says—"Generally speaking, Chrysanthemums have had a bad time of it in Scotland." At the late Edinburgh show, where the leading prizes were won by Scotch growers, they never have been so fine. On all hands it was said that this has been the best season ever experienced by the Scottish growers. At the banquet, in responding to the toast of the exhibitors, Mr. Lunt, the leading Scottish prizewinner, attributed much of his success to the favourable weather Scotland had enjoyed. Certainly, I never saw in Scotland Chrysanthemum flowers of a better colour, brighter, fresher, or with such substance in the florets, as on that occasion. No exhibit could have been staged in such prime condition as were the 1st and 2nd prize stands in the great Vase Class if the season had been as unfavourable as was implied by Mr. Brotherston. Not only was this fine quality very remarkable in the classes alluded to, but throughout the show also. Never has there been witnessed anywhere such a display of the ordinary decorative varieties shown without disbudding: no fewer than seventeen exhibitors taking part in the contest for three vases of this type of flower. Plants, too, were a great improvement on recent years, being not only larger, but more freely flowered, and better furnished with healthy foliage. The blooms themselves, too, were bright and fresh-looking, showing that the shoots were perfectly matured, without which the finest flowers are unobtainable. *F. Molyneux.*

THE PURPLE BEECH.—Whatever tastes in foliage coloration may be, we should all be thankful that the chlorophyll in the leaves of our trees is green rather than red, yellow, or some other tint. Green is by far the most neutral, restful, and pleasing hue, and, so far as I can judge, the most pleasing hue for extent. What can be more lovely than a broad expanse of verdure of lively green, over which hang in rich luxuriance trees laden with foliage of darker and diverse shades of green? Not all the cocknified variegation in the world can equal that for beauty and charm. But I am far from despising the Purple Beech when it shows really good colour. A pale or greenish-purple-leaved variety is a good tree spoiled. A tree, the foliage of which is of purplish-maroon colour, and which is also vigorous and noble, is a fine feature; but, all the same, should be sparsely found. One of the very handsomest and finest, as well as deepest coloured of Beeches I have seen is on the lawn at Dover House, Roehampton, and I have thought that growing on a dry, warm, gravelly base, that such soil helped to promote coloration. Creamy or white variegated trees soon assume a tawdry appearance, especially in windy spots or near towns. A garden largely planted with variegated trees, Golden and Silver Hollies especially, all cone-shaped, variegated Conifers, Aucubas, Euonymuses, and various other distorted-leaf trees and shrubs, is a horror from which anyone with taste soon escapes. Let us have flowering trees and shrubs in abundance, plenty of natural and graceful growth, but keep the pepper-box variegated things to delight the denizens of Brixton and Clapham. *A. D.*

TIMELY PLANTING OF BULBS.—Mr. H. W. Ward is well known as an excellent gardener—one from whom I should be glad to learn on many subjects—and he can well afford to leave alone the support of a false practice by false arguments. Indeed, some of his arguments obviously make against himself. Why has he, "with very satisfactory results," transplanted Snowdrops and Narcissi in June, unless because that is the right season, and October or November the wrong one? Bulbs planted at the latter date may flower fairly well, for as I have acknowledged, they are long-suffering subjects, and patient under ill-treatment. But both seasons cannot be best. Bulbs have other work to do besides flowering, and, as it is my habit to go not by theories, but by facts, I will give Mr. Ward a proof which he will find difficult to gainsay. In the summer of 1894 I lifted a large bed of Narcissus Empress. Three of the bulbs I replanted the first week in August, and kept three of the same size and weight very carefully until the first week in November, when they were planted in the same bed with the former three, and in the same row, a space

having been left vacant on purpose. The later-planted bulbs bloomed nine days after the others, and their flowers were good, though distinctly smaller than the earlier ones. In June both lots were lifted, when the foliage showed that the bulbs were ripe. The earlier-planted bulbs had all made fine offsets of bloomings size; the others only small and scarcely detachable offsets. Both lots were again planted separately. The earlier, which I will call A, the first week in August; the later B, the first week in October. In 1896 the same thing was once more done, A being planted the first week in August, B the first week in September. In June, 1897, both lots were lifted and weighed; the total produce of A was just 2½ times as heavy as that of B. It is to be noticed that in the second and third seasons I gradually approximated the date of B's planting to that of A. If B had every year been planted in November, its final deficiency in produce would have been still more marked. This experiment supplies the answer to Mr. Ward's confident appeal to the "grand floral displays in the London Parks." The bulbs bloom; but what becomes of them afterwards? Mr. Ward must bear in mind that it is the right practice of market-growers which is under discussion, and a market-grower who is provident, and on the road to success, will do his utmost to secure not only his bloom, but the fullest increase of his stock. The quotation from Mr. Birkenshaw, that Narcissus bulbs should be planted "about the middle of October," scarcely helps Mr. Ward, for the next words are "or earlier if possible." And surely Mr. Ward is not serious in his argument, that because well-known dealers advertise Daffodil bulbs in November, therefore this is the right time to plant. It is no disparagement of a dealer to say that he has to live, and that a large number of bulbs, like the Jew's razors, are "made to sell." Daffodil bulbs can be bought to any amount in January—is January therefore the right time to plant them, or where does Mr. Ward draw the line? As he has made use of Mr. W. B. Hartland's name, let us hear his opinion on this question:—"Bulbs that are out of the soil for five or six months cannot possibly give satisfaction. . . . I therefore impress upon my customers to send their orders in August and September, and get them to mother earth early." Mr. Hartland prefaced his catalogue with these words in 1887, and I do not suppose he has changed his mind since. Messrs. Barr state that "the best time to plant to obtain the finest flowers is September," and probably would not contradict my experience of nearly twenty years' careful observation, that for the largest increase of stock August is still better. As to the date of arrival of bulbs from Holland, I can only say that I often buy from Holland direct a thousand or two of bulbs perhaps at a time, and obtain them in August. It is merely a matter of demand and supply; buyers have only to insist upon receiving supplies at the right time to get them. A little resolute combination on the part of customers would soon produce Iris bulbs in August; indeed, I know a large cut flower market-grower who buys and plants Spanish Iris in that month. Why does Mr. Ward say that the market gardener and the (flattering epithet!) Narcissus hybridist have different objects in view? Certainly, my object is to grow every plant to the highest perfection in flower, leaf, and bulb, and if a market-gardener knows his business his object is the same. One more point: Mr. Ward hopes my Narcissus will not be damaged by frost, because their leaves are already breaking the soil. Will it surprise him to learn a fact, of which I am quite certain from the very careful observation of many years, namely, that it is the late, not the early-planted, bulbs which are susceptible of injury from frost? The reason is not far to seek: the bulb possessed of abundant, deep roots is full of strength and hardihood, and is not moved by the alternate expansion and contraction of the upper soil in frost and thaw; while the late-planted, feebly-rooted bulb has no hold of the ground, and often suffers, like a badly-anchored ship. *Geo. Engleheart.*

JUDGES AND EXHIBITORS.—The emphatic "not" at the end of "A Competitor's" note in the *Gardeners' Chronicle* (p. 372), will be welcomed by all competitors at horticultural shows, and it encourages me to go a little further in suggestions in the way of purging exhibitions of various abuses. No judge or exhibitor ought to possess any knowledge of the exhibitors, and no judge should be a competitor. Whenever the warning is given for exhibitors and their assistants to leave the exhibition tents or building, they ought to comply at once, under the penalty of having their exhibits disqualified; it should likewise be insisted upon that the secretary and com-

mitteemen who are exhibitors, or have therefore a personal interest in the awards, should also retire till the judging is finished. Our system of staging and arranging exhibits has become so complete that judges do not require anyone beside the clerks to follow them; moreover, the remarks and comments of other persons are a fruitful source of errors in judging, for notwithstanding all that has been said and written regarding the rules for judging, the cultivated mind and eye of the judges must still be concentrated on the objects shown, if an accurate judgment is to be given. *A. D. Christie, Ragley Gardens.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 13.—The last meeting for the year 1898 of the Committees of the Royal Horticultural Society was held on Tuesday last in the Drill Hall, James Street, Westminster. There was not a great array of exhibits, but in view of the fact that the Chrysanthemum season has practically terminated, and that Christmas was less than a fortnight ahead, the exhibition was satisfactory. Orchids constituted an important feature in the display, and there were some choice novelties shown. The collections of varieties of Cypripedium were most interesting. The exceedingly popular winter-flowering Begonia, Gloire de Lorraine, was extensively shown, and Messrs. JAS. VEITCH & SONS had a group of plants representing their B. socotrana hybrids. Zonal Pelargoniums from Swanley, Chrysanthemums from Mr. W. WELLS, Earlswood, and fine-foliage plants from Messrs. SANDER & Co. and others, were all pretty features. The Fruit Committee had very little indeed before them. Most of the members of the several committees make an endeavour to attend the final meeting for the year, and on Tuesday a good number of them were present, and the compliments of the season were freely exchanged. In the afternoon, the Rev. Professor HENSLow gave an interesting lecture upon certain plants he selected from those exhibited.

AWARDS TO NOVELTIES.

- Seldom are fewer awards granted than on Tuesday last. The Floral Committee recommended a First-class Certificate to *Asparagus Sprengeri compacta*. The Orchid Committee recommended Awards of Merit to *Lælia Digbyana purpurata* and *Calanthe revertens*. Also a First-class Certificate to *Cypripedium insigne* var. *Harefield Hall*.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. C. T. Druery, H. J. Jones, J. H. Fitt, H. B. May, C. Jefferies, R. Dean, G. Stevens, W. Howe, J. Hudson, J. Jennings, C. J. Salter, J. F. McLeod, G. Gordon, C. E. Pearson, C. E. Shea, J. T. Bennett-Poë, J. D. Pawle, C. Blick, H. Turner, E. T. Cook, and G. Paul.

Begonia Gloire de Lorraine was again capitally shown by Mr. H. B. MAY, Dyson's Lane Nursery, Upper Edmonton, who had upwards of thirty beautifully-flowered specimens. These were freely interspersed with choice Ferns, and a very effective display was made (Silver gilt Banksian Medal).

Asparagus Sprengeri compacta, for which Mr. MAY obtained a First class Certificate, differs from the type only in its dwarf habit. It is said that under any system of cultivation the growths will not become more than 18 inches in length. The growths are produced more numerous, and for some purposes the plant will be found more convenient than *A. Sprengeri*, although this is a graceful and valuable plant. Several additional seedling varieties of the plant, exhibiting more or less peculiarities, were exhibited.

Messrs. H. CANNELL & SONS, Swanley, exhibited a collection of flowers of zonal Pelargoniums in sprays, relieved with an abundance of Fern fronds. The two best novelties shown were *The Sirdar*, a very large single flowered scarlet, of good form; and *The Mikado*, also a large flower, of a shade of cerise colour. There were upwards of forty varieties represented in this bright exhibit (Silver-gilt Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, had a very pretty group upon the cross-table of their hybrid Begonias, obtained from crossing *B. socotrana* with a tuberous-rooted variety from the Andes. Several of these excellent winter bloomers have already been figured in our pages. The strain now includes varieties that exhibit more or less difference in habit of growth and in the shade of colour of the flowers. *Myra* is rather shorter than *Winter Cheer*, and considerably paler in colour. *Ensign* is a double-flowering variety of rather compact habit. Success shows the greater distinctness in colour, and it is a more double flower; the colour is warm pink. Messrs. Veitch & Sons also showed a plant of *Exquisite*, a beautiful yellow-flowered variety of their hybrid *Rhododendrons* (Silver Flora Medal).

From Mrs. WINGFIELD, Amptill House, Amptill, Beds (2r.), Mr. W. J. EMPSON, was shown a plant in flower of *Plumbago rosea*, a very useful and showy stove plant that should be as generally grown as the blue-flowering species, *P. capensis*.

MESSRS. SANDER & Co., St. Albans, showed some large, well-flowered plants of *Acalypha Sanderi* also plants of

Dracæna Godseffiana, *D. Sanderiana*, *Linospadix Petrickiana*, *Acalypha Godseffiana*, a most decorative plant, with green leaves, margined with cream colour (Silver Banksian Medal).

A group of miscellaneous plants was shown by C. A. PEARSON, Esq., Frenshaw Place, Farnham (gr., Mr. J. Prewett); this exhibit contained plants of *Begonia Gloire de Lorraine*, *Ericas*, *Dracænas*, *Codiceums*, &c. (Silver Banksian Medal).

Mr. W. WELLS, Earlswood Nurseries, Redhill, Surrey, made an exhibit of *Chrysanthemum* blooms. We noticed the new white Japanese Nelly Pockett, Beauty of Sholing, a yellow-flowered decorative variety, some of the florets marked red; Mrs. W. Butters, a white decorative, with singularly forked florets; Redhill Beauty (Japanese), a soft pleasing shade of yellow; Snowflake, a new white somewhat reflexed Japanese, a very late bloomer, and having moderately short florets of good width; Sunset, buff Japanese; Madame Phillip Rivoire, white Japanese; M. Veillard, yellow Japanese; Madame H. de la Rochette (Cordonnier), a Japanese, with incurving florets of a very delicate shade of pale green; Julia Scaramanga; Georgina Pitcher, Japanese incurved, yellow; and Sam Caswell, a small flower, with narrow pink-coloured florets (Silver Banksian Medal).

Mr. W. J. GODFREY, Exmouth Nurseries, Devon, showed blooms of three varieties of *Chrysanthemums*, Queen of Pink, Christmas Favourite (white), and Winter White, all promising decorative varieties.

Several varieties of *Primula sinensis* were shown by Mr. ECKFORD, Wem, Salop.

A bloom of the singular *Narcissus viridiflorus* was shown by A. KINGSMILL, Esq., Harrow Weald. The blooms of this species are very small, and consist of a perfectly green perianth, with a green cup in centre.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. Ballantine, H. Little, G. W. Law-Schofield, Elijah Ashworth, H. J. Chapman, W. H. Young, W. H. White, H. M. Pollett, E. Hill, T. B. Haywood, T. W. Bond, and Sydney Courtauld.

The last meeting of the year was graced by an unusually fine and bright display of Orchids. The most extensive group, extending over some 25 feet run of the stages, was from Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr., Mr. W. H. White). The principal feature of this exhibit consisted of the fine sets of the Burford hybrid *Calanthes*. A number of well-bloomed plants of the handsome *Calanthe* \times *Burfordensis* well displayed its bright carmine-crimson tint. Of the same class of rich bright carmine-crimson colour, the new *C. x revertens* was also shown, and secured an Award of Merit. Its parentage is not determined, but the flat, peculiar ovate form of the lip of *C. labrosa* is evident, and it has taken part in the production at some stage of its history. Other handsome varieties were *C. x versicolor*, white, with reddish-rose eye; *C. x bella*, rose, with white eye, bearing a dark blotch; *C. x amabilis*, pink, white centre; *C. x Victoria Regina*, creamy-white, tinged with pink; and *C. x Veitchi splendens*, one of the brightest of the carmine-crimson class. The group also included some fine forms of *Cypripedium* \times *Leeanum*, a good plant of that form of *C. x Ceres* known as *fascinatium*; a plant of the curious *Odontoglossum* \times *Coradinei flavidum*; and a home-raised hybrid *Odontoglossum*, supposed to be between *O. triumphans* and *O. crispum*. It has a light yellow ground, marked with reddish-brown spots, and resembling *O. x Wilckeanum* (Silver Flora Medal).

A Silver Flora Medal was also awarded to R. I. MEASURES, Esq., Cambridge Lodge, Camberwell, for a very fine group of Orchids, including a very interesting series of varieties of *C. insignis*. Two of the best of these were the charming *C. i. Sanderæ*, and the stately *C. i. Ernesti*, which is a clear yellow form, showing much white on the upper sepal, and indistinct traces of spotting, proving it to be of the *C. i. violaceo-punctatum* type. Also remarkable were *Cypripedium* \times *Wottoni* (*bellatulum* \times *callosum*), and a similar variety said to be obtained between *C. Godefroyæ* *leucichilum* and *C. callosum*. This plant was interesting, as it was from seed sown in January, 1896. Other good *Cypripediums* were *C. x Allenianum* *superbum*, *C. x Behrensianum*, varieties of *C. x Leeannum*, *C. x Milo*, *C. x Zeno*; and of other plants, *Masdevallia pachyura*, *M. x Measuresiana*, the singular black and silver *Pleurothallis punctulata*, *Cattleya* \times *Miss Harris*, and *Lælio-Cattleya* \times *Schilleriana*.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, showed a very important group, in which were some remarkable hybrids. Of these the finest was *Lælia* \times *Digbyana*-*purpurata* (*Digbyana* δ , *purpurata* ϕ). The plant is evidently intermediate between the parents, though the flower in form closely approached a fine *L. purpurata*, and, contrary to the case of *L.-C. x Digbyana*-*Mossie*, but little fringing is as yet perceptible on the lip. The sepals and petals are bluish-white, and the front of lip large, and of a purplish-crimson colour (Award of Merit). Other remarkable hybrids were *Lælia* \times *Omen* (*autumnalis* ϕ , *purpurata* δ), like a much-enlarged *L. autumnalis*; *Lælio-Cattleya* \times *Frederick Boyle* (*C. Trianae* ϕ , *L. anceps* δ), in form like a very large *Lælia* *anceps*, but with *Cattleya*-like lip; sepals and petals bright light rose, lip yellow at the base, veined purple, and purplish crimson in front. *L.-C. x F. Boyle* var. *amena* (*C. Trianae* ϕ , *L. anceps* *Veitchiana* δ), with the middle area of the lip cream-white; the fine *L.-C. x Semiramis*, *Cattleya* \times *Ariel* (*Bowringiana* ϕ , *Gaskelliana* δ), *L.-C. Andreae* var. *Agnes*; *Phalanopsis* \times *Hebe* (*rosea* ϕ , *Sanderiana* δ), *Lælio-Cattleya* \times *Decia*, *Lælia* \times *Novelty*, *Ipidendrum* *Endresio-Wallisii*, and a very fine set of *Cypri-*

pediums, including *C. insignis* *Sanderæ*, *C. i. Sanderiana*, &c. (Silver Banksian Medal).

Among the dozens of varieties of *Cypripedium* *insigne* shown, the noble *C. insignis* *Harefield Hall* variety, shown by ELIJAH ASHWORTH, Esq., Wilmslow (gr., Mr. H. Holbrook), stood out as a giant in proportions, and it is exquisite in form and marking. The noble plant, for which a First-class Certificate and a Cultural Commendation was awarded, has been grown in the Harefield Hall collection since early in 1894. The plant bore a number of perfectly-formed very large flowers, and is doubtless the finest form of its class. A distinguishing characteristic is the great size of both upper and lower sepals. The superior one was pale yellowish-green on the lower half, spotted with distinct and evenly displayed dark blotches, the upper half being pure white.

Captain HOLFORD, Westonbirt, Tetbury, Gloucestershire (gr., Mr. A. Chapman), sent a fine collection of cut *Cypripediums*, among which were the large clear yellow *Cypripedium* *insigne* *Dorothy*, and other good forms; *C. x Niobe*, and *C. x Niobe* *superbum*; a number of good forms of *C. x Leeannum*, including *C. L. giganteum* and *C. x L. superbum*; a number of *C. Spicerianum*, of which one very dark and one pale form were distinct; a fine spike of *Cymbidium* *Traceyanum*, *Lælia* *anceps*, &c. (Silver Banksian Medal).

HENRY LITTLE, Esq., Baron's Hall, Twickenham (gr., Mr. Howard), staged a pretty group, especially strong in *Cypripediums*, among which were *C. tonsum*, *C. Stonei*, *C. Chamberlainianum*, *C. Spicerianum*, and other species. Also a number of good hybrids, including *C. x Lathamianum*, *C. x Behrensianum*, &c. (Bronze Medal).

Messrs. HUGH LOW & CO., Clapton, staged a good group, in which the central figure was the pretty clear-yellow *Cypripedium* *insigne* *Laura Kimball*; around it were some fine forms of *C. x Leeannum*, *C. x Chas. Canham*, and other hybrids; *Lælio-Cattleya* \times *Apollonia*, *L.-C. Wolstenholmia*, *L.-C. x Aurora*, the pale purple-tinted *Dendrobium* *Phalanopsis violaceum*, quite a novelty in colour; and at the back the dark-coloured *Cymbidium* *Traceyanum* *superbum* (Silver Banksian Medal).

Messrs. F. SANDER & CO., St. Albans, staged a group in which were *Cypripedium* \times *Leeannum* *superbum*, *C. x L. giganteum*, *C. x Madame Margaret Hye*, a large flower of the *C. x Leeannum* *giganteum* class; *C. x Albert Hye*, *C. x nitens* *superbum*, *C. x Titus*, *Sander's* var.; *C. x callosoliriatissimum*; a good series of the "montanum" type of *C. insignis*, including *C. i. giganteum*, &c.; *Oncidium* *varicosum*, *O. Forbesii*, &c.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. S. Cooke) showed *Odontoglossum* *Ruckerianum* *platycheilum*, a pretty variety of a creamy-white colour, tinged with rose, and profusely spotted with dark red. A peculiar feature was its flat, ovate, serrate lip.

Sir WILLIAM MARRIOTT, Down House, Blandford (gr., Mr. Denny), showed a fine hybrid obtained between *L.-C. x elegans* and *C. Warscewiczii*, and which is identical with *L.-C. x Henry Greenwood* (*L.-C. x elegans* \times *C. x also a Hardyana*); hybrid between *C. Mandeli* and *C. Warscewiczii*.

Captain G. W. LAW-SCHOFIELD, New-Hall-Hey, Rawten-stall, Manchester (gr., Mr. Shill), showed *Cypripedium* \times *Norma* (*Spicerianum* \times *Niobe*) of fine quality.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, showed the curious *Lycaste* *lasioglossa*, reddish in colour, with singularly hairy lip (Botanical Certificate).

W. C. WALKER, Esq., Winchmore Hill (gr., Mr. Geo. Cragg), showed a fine plant of *Dendrobium* *aureum*, covered with flowers (Cultural Commendation); and *Lycaste* *cruenta*.

G. C. ROBERTS, Esq., Nottingham, sent a fine spike of a variety of *Cymbidium* \times *Winnianum*.

Fruit Committee.

Present: Philip Crowley, Esq., chairman, and Messrs. Geo. Bunyard, J. Willard, Jos. Cheal, Jas. H. Veitch, A. F. Barron, T. J. Saltmarsh, Alex. Dean, C. Herrin, W. Pope, J. W. Bates, Geo. Wythes, W. J. Empson, H. Balderson, G. H. Sage, F. Q. Lane, Jas. Smith, Geo. Reynolds, G. Norman, and Robt. Fife.

Mr. W. SHINGLER, gr., Melton Constable, East Dereham, Norfolk, showed a bunch of Grapes, said to be a cross from Lady Hastings and Gros Colman. It was thought by the committee to be undistinguishable from Gros Colman.

There were several seedling Apples shown, including a nice-looking variety from Mr. Ross, Welford Park Gardens.

Messrs. BRETON, Forest End, Sandhurst, showed several heads of Cardoon, a variety of the Globe Artichoke, that furnishes thick fleshy leaves like Celery, not commonly cultivated in England (Vote of Thanks).

An interesting exhibit was made by Mr. C. HERRIN, The Gardens, Dropmore, who had some very nice tubers of *Oxalis crenata*, an edible vegetable, in the nature of a small Artichoke, and said to be much easier of satisfactory cultivation than *Stachys tuberifera*. *Oxalis crenata* was introduced some forty years ago (Vote of Thanks).

WARGRAVE AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

DECEMBER 7.—An ordinary meeting of the above Society was held on the above date, when Mr. J. W. GROVES F.L.S., gave the second of his course of lectures on Botany, the subject being "Stems."

The lecturer first recapitulated his previous lecture by showing a series of lantern-slides, and then passed on to the subject for the evening. He gave the definition of a stem,

and showed how it was built up of groups of cells. The various parts composing the stems of dicotyledonous and monocotyledonous plants were fully described. The means of leaf insertion and the continuity of protoplasm from cell to cell, was made exceedingly clear. The various means by which stems are supported, their many shapes and kinds, the manner in which injuries are repaired, why a leaf falls, the best methods of pruning, budding and grafting, were all explained. Microscopic preparations in illustration of the lecture were shown at the close. A fine group of *Cypripedium* *insigne* and *C. insignis* *Maulei* were exhibited by the chairman, gr. to J. P. WHITE, Esq., and a good collection of *Chrysanthemums* by Mr. W. Greenaway, gr. to S. V. COOTE, Esq. H. Coleby, Hon. Sec.

PUTNEY, WANDSWORTH, & DISTRICT CHRYSANTHEMUM.

DECEMBER 12.—Nearly a hundred members of this enterprising Society were present on Tuesday last at the annual dinner. It was held at the Spread Eagle, Wandsworth, and the proceedings were enthusiastic and enjoyable. Advantage was taken of the event to publicly present the handsome Challenge Cup (value 25 gs.) to Mr. G. J. HUNT, Ashstead Park Gardens, Epsom, whose absolute property it has now become. Several other valuable special prizes were similarly presented.

The recent exhibition held in the Town Hall, Wandsworth, was a success. Notwithstanding that more expenses have been incurred during the past year than heretofore, the Society has a satisfactory condition of finance, there being a balance on the right side of £10.

The Hon. Sec., Mr. J. F. McLeod, in responding to the toast of the Society, intimated that it was proposed to encourage the exhibition of *Chrysanthemum* blooms in vases by including a class for them in the next year's schedule, and offering a 1st prize of £10 in cash, with valuable 2nd and 3rd prizes also. The Secretary declared the intention of the committee was to make the Society's exhibitions (so far as regards the county of Surrey) second only to those of the National *Chrysanthemum* Society.

The show next year will be held in Putney, and presumably in 1900 it will be again transferred to Wandsworth.

NATIONAL DAHLIA.

DECEMBER 13.—The annual meeting of this Society took place at the Hotel Windsor, T. W. GIRDLESTONE, Esq., M.A., the President, in the chair, there being a large attendance of members, and especially of growers from the country.

The Secretary Mr. J. F. HUDSON, submitted the annual report, which set forth that the season of 1898 was remarkable for the severe and long-continued drought, which so affected the development of the Dahlia in some districts that some cultivators could not exhibit, whilst others could do so only sparingly. The season was also remarkable for the length of time the Dahlias continued in bloom, remaining in flower in many localities quite up to the middle of November. The annual exhibition at the Crystal Palace in September was affected by the incidence of the season, and though the entries—300 in number—were up to the average, the show generally was not so large as is usual. The show and fancy Dahlias especially did not display their usual finish, but the Cactus varieties were very fine, and the varieties continue to increase with remarkable rapidity. The single varieties were also well represented, and they appear to be rising in popular favour. Though new varieties were numerous, and especially in the Cactus section, Certificates of Merit were sparingly awarded, and only to those of the highest excellence.

During the past season the Society issued a catalogue of Dahlias, the president taking the leading share in compiling it. A goodly number of copies have been disposed of, and there is a demand for it from non-members of the Society who are cultivators. A movement is on foot in favour of the affiliation to the parent Society of Dahlia Societies in the provinces, which appear to be on the increase. Reference was made in the report to the death of Mr. W. H. Cullingford, by whom the Cactus Dahlia *Juarezii* was introduced to this country. The report concluded with an expression of thanks to the donors of special prizes.

The financial statement showed that the receipts from all sources had amounted to £292 2s. 7d., including a balance in hand of £21 1s. 1d.; and the entire expenditure, including the payment of all prizes awarded at the Crystal Palace Show and the cost of issuing the catalogue, amounted to £186 18s. 10d., leaving a balance in hand of £105 3s. 9d. The cost of printing the catalogue was £21, but this expense was to a considerable extent met by advertisements in and the sale of the same.

Mr. T. W. GIRDLESTONE was elected President, Messrs. T. Hobbs, R. M. Hogg, and F. W. Sharp, were added to the Vice-Presidents; and Messrs. W. Treseder and G. Gosney were added to the committee; Mr. G. Mawley was elected Treasurer, and Mr. J. T. Hudson, Secretary. The list of True Cactus-Dahlias, annually published in the Schedule, was revised; several of the older varieties, such as *Delicata*, *Earl of Pembroke*, *Gloriosa*, *Iona*, *Juarezii*, *Mary Hillier*, *May Pictor*, *Mr. H. Cannell*, *Robert Canuell*, and *Violet Morgan*, were struck out, as superseded by varieties of improved form; and the following were added to the list:—*Antelope*, *Countess of Lonsdale*, *Lucius*, *Magnificent*, and *The Clown*, all Certificated by the Society; and the following also—*Viscountess Sherbrooke*, *Bridesmaid*, *Ranji*, *Laver-*

stock Beauty, Falka, Stella, Casilda, and Ebony. It was also resolved to give exhibitors freer choice in the exhibition of Cactus varieties than has hitherto been the case.

DEVON AND EXETER GARDENERS' ASSOCIATION.

CHEMICAL MANURES APPLIED TO GARDEN CROPS.—In connection with the Devon and Exeter Gardeners' Association, Mr. F. W. E. Shrivell, F.L.S., Thompson's Farm, Golden Green, Tonbridge, Kent, lectured in the Guildhall on November 24, on "Further experiments with Chemical Manures applied to garden crops." Mr. W. Mackay presided over a large attendance.

Mr. Shrivell said everyone knew what they were doing at Golden Green. They were testing the economical value of chemical manures as compared with dung. They wanted to know really if it was possible to grow market produce more cheaply by the aid of small quantities of chemicals and dung than with large quantities of dung alone. This was their fifth year of working, and with the advance of each year the reports became more interesting. Their system had been to add chemicals to the land to as far as possible take the place of dung. Dung was made up of four principal constituents—potash, phosphoric acid, ammonia, and lime. They were, therefore, putting these four chemicals into the ground in suitable proportions, and with a judicious use of that mixture they were getting marvellous crops, and at a much cheaper rate than could be produced by the aid of dung alone. Mr. Shrivell gave the results of the experiments:—

A		B	
25 Loads of Dung.		25 Loads of Dung.	
1 cwt. nitrate of soda		2 cwt. nitrate of soda	
6 cwt. basic slag, or		6 cwt. basic slag, or	
4 cwt. superphosphate of lime		4 cwt. superphosphate of lime	
Cost, £6 10s. per acre.		Cost, £7 per acre.	

C		D	
Chemicals only.		25 Loads of Dung.	
4 cwt. nitrate of soda		4 cwt. nitrate of soda	
6 cwt. basic slag, or		6 cwt. basic slag, or	
4 cwt. superphosphate of lime		4 cwt. superphosphate of lime	
Cost, £3 per acre.		Cost, £3 per acre.	

E		F	
75 Loads of Dung.		50 Loads of Dung.	
Cost, £5 per acre.		Cost, £10 per acre.	

Dealing by the aid of his large diagram (in which all the results were calculated upon a per-acre basis) with some of the most interesting crops, the lecturer first took—

Asparagus (First Year's Cutting).		
	Bundles per Acre (50 sticks).	Weight per Bundle.
F Plot ...	103	17 ounces.
E " ...	637	17½ "
D (Salt) ...	104	21½ "
D (Kainit) ...	1,158	20½ "
C (Salt) ...	622	17½ "
C (Kainit) ...	803	21 "

Second Year's Cutting.		
	Bundles per Acre (50 sticks).	Weight per Bundle.
F Plot ...	1,109	18 ounces.
E " ...	1,111	17 "
D (Salt) ...	1,132	19½ "
D (Potash) ...	1,351	2½ "
C (Salt) ...	990	19 "
C (Potash) ...	1,023	21 "

Tripp's Onions (two years' average).—F Plot, 9 tons; E, 7 tons; A, 9 tons 7 cwt.; B, 9 tons 5 cwt.; D, 10 tons 15 cwt.

This Year.—F Plot, 12 tons 12½ cwt.; E, 14 tons 11½ cwt.; A, 15 tons; B (Potash), 19 tons 1 cwt.; D, 17 tons 14½ cwt.

Strauberris (three years' average).—F Plot, 1 ton 7½ cwt.; E, 1 ton 12 cwt.; B, 1 ton 19½ cwt.; C, 1 ton 3 cwt.

Fourth year's crop.—F Plot, 2 tons 12 cwt.; E, 4 tons 4½ cwt.; B, 4 tons 7 cwt.; C, 2 tons 9½ cwt.

Brussels Sprouts (four years' average).—F Plot, 282 sieves; E, 257 sieves; D, 321 sieves; C (Kainit), 305 sieves; C (plus salt), 267 sieves.

The relative value of the produce and the cost of manuring worked out as follows:—

Plot	Sieves.	Cost of Manure.	Produce, ls. fd. per sieve.
E ...	257	5 0 0	19 5 0
F ...	282	10 0 0	21 3 0
C ...	305	3 2 0	22 17 0
C (plus salt) ...	267	2 17 0	20 0 0

Califlowers (four years' average).—F Plot, 15 tons 2 cwt.; E, 12 tons 8 cwt.; D, 15 tons 9 cwt.; C, 14 tons 8 cwt.

Broccoli (three years' average).—F Plot, average weight, 2 lb. 5 oz.; E, 1 lb. 14 oz.; A, 2 lb. 4 oz.; B, 2 lb. 6 oz.; D, 2 lb.; C, 2 lb. 7 oz.

Fourth Year, 1898.—F Plot, 2 lb. 8 oz.; E, 2 lb. 4 oz.; A, 2 lb. 6 oz.; B, 2 lb. 12 oz.; D, 2 lb. 6 oz.; C, 2 lb. 12 oz.

Spring Cabbages (three years' average).—F Plot, 16½ tons; E, 15½ tons; B, 17½ tons; D, 16½ tons; C, 18½ tons.

Fourth Year, 1898.—F Plot, 16 tons 5½ cwt.; E, 13 tons 11½ cwt.; B, 16 tons 14 cwt.; D, 19 tons 5½ cwt.; C, 17 tons 6½ cwt.

Where salt, kainit, or potash is mentioned, it has been used in conjunction with the other chemicals referred to. The amount of kainit and salt employed being at the rate of 4 cwt., and of potash (sulphate of potash) at the rate of 1 cwt. per acre. *Western Time*, November 24, 1898.

LAW NOTES.

DAMAGES AGAINST A SEEDSMAN.

His Honour, Judge Stravenson, has now given judgment in the Carlisle County Court, in an action brought by Mr. McLaren, a hotel-keeper of Wetheral, against the defendants, Messrs. Clarke Bros., seedsmen, of Carlisle. The plaintiff claimed damages in connection with a purchase of grass lawn-seeds, which he alleged contained a large quantity of Yorkshire-fog, or white-top. The judge found for the plaintiff for £18.

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.					(More +) or less (−) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
	Above (+) or below (−) the Mean for the week ending December 10.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 2, 1898.	Below 42° difference from Mean since January 2, 1898.					
0	4 +	25	13	+ 317	− 243	26 +	242	60.0	10	28
1	7 +	30	10	+ 222	− 258	5 +	191	23.7	23	20
2	8 +	40	0	+ 355	− 267	3 −	108	21.3	25	22
3	9 +	42	0	+ 312	− 281	4 +	146	19.0	21	35
4	9 +	45	0	+ 254	− 293	3 +	152	20.3	20	32
5	9 +	55	0	+ 399	− 293	5 +	142	20.4	14	36
6	7 +	34	0	+ 319	− 258	6 +	200	42.8	14	31
7	8 +	52	0	+ 393	− 281	0 aver	186	31.9	15	34
8	8 +	57	0	+ 417	− 181	10 +	174	33.0	22	39
9	6 +	35	2	+ 339	− 216	4 +	228	36.0	18	30
10	6 +	53	0	+ 465	− 169	1 +	187	37.0	18	34
*	7 +	76	0	+ 618	− 100	5 +	104	25.8	22	47

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

MARKETS.

COVENT GARDEN, DECEMBER 15.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.		s. d. s. d.	
Arums, 12 blooms		9 0-12 0	
Azalea indica, white, 12 sprays		1 0-1 3	
Carnations, pr. doz. blooms		2 0-2 6	
Chrysanthemums, white, 12 blooms		6 0-9 0	
— yellow, 12 bms.		4 0-6 0	
— per dozen bun.		6 0-9 0	
Eucharis, per dozen		4 0-6 0	
Gardenias, per doz. blooms		2 0-3 0	
Hyacinths, Roman, per doz. bunches		6 0-8 0	
Lilium Harrisii, per dozen blooms		9 0-12 0	
— lancifolium, per dozen blooms		8 0-10 0	
— longiflorum, per dozen bunches		12 0-15 0	
Lily of the Valley, dozen sprays		1 6-2 6	
Maidenhair Fern, per 12 bunches		6 0-8 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.		s. d. s. d.	
Adiantums, p. doz.		4 0-12 0	
Aspidistras, p. doz.		12 0-30 0	
— specimen, each		5 0-15 0	
Chrysanthemums, various, per doz.		9 0-24 0	
Dracanas, each		1 0-7 6	
— various, per doz.		12 0-24 0	
Ericas, per dozen		12 0-21 0	
Evergreen shrubs, in variety, p. doz.		6 0-24 0	
Ferns, small, per dozen		1 0-2 0	
— various, p. doz.		5 0-12 0	

FRUIT.—AVERAGE WHOLESALE PRICES.		s. d. s. d.	
Apples, King, per sieve		2 6-3 8	
— Gold Knobs, bush.		4 0-5 0	
— Wellingtons, bush.		5 0-8 0	
— Sourings, per bushel		5 0 —	
— Blenheim, per bush.		5 0-7 0	
— Large cookers, per bushel		4 0-5 0	
— Nova Scotia, Bienheims, Ribstons, Kings, and other various sorts, per barrel		10 0-20 0	
— Californian, New Towns, per case		9 0-10 0	
— Baldwins, &c., per case		8 6-10 0	
— Canadian, various sorts, Baldwin, Ben Davis, Greenings, &c., per barrel		10 0-20 0	
Bananas, bunch		7 0-10 0	

VEGETABLES.—AVERAGE WHOLESALE PRICES.		s. d. s. d.	
Artichokes, Globe, per doz.		3 0-4 6	
— Jerusalem, per sieve		1 6-2 0	
— Stachys, or Chinese, p. lb.		0 5 —	
Beans, Dws., Channel Islands, lb.		10-1 3	
— French, lb.		0 4-0 6	
— Maderia, bkt.		2 0-2 6	
Beetroots, per dozen		0 6-0 9	
— bushel		2 0 —	
Brussels Sprouts, per sieve		1 6-1 9	
— per bushel		2 0 —	
Cabbage, doz.		1 0-1 3	
— Coleworts, per bushel		1 6 —	
— Savoys, p. doz.		1 3-1 9	
— per tally		6 0-8 0	
Cardoons, each		1 0-1 3	
Cauliflowers, English, per dozen		1 6-2 0	
— per tally		7 0-10 0	
— Italian, baskets of 18		2 9-3 6	
Celeriac, per dozen		1 6-2 0	
Cress, doz. punnets		1 6 —	
Carrots, washed, in bags, fine		3 0-3 6	
— unwashed		2 0 —	
— Surrey, bunches		2 0-2 6	
Celery, Red, dozen bundles		8 0-18 0	
Chicory, per lb.		0 3-0 4	
Chow Chows, doz.		2 0 —	
Cress, doz. punnets		1 6 —	
Cucumbers, per doz.		6 0-12 0	
Endive, French, per dozen		1 4-2 0	
Garlic, per lb.		0 3 —	
Horseradish, New English, bundle		2 0-2 6	

POTATOES.
Beauties, Saxons, Giants, Up-to-Date, &c., according to sample, 60s. to 80s. per ton; D'Albar Main Crops, 90s. to 95s. *John Bath*, 32 and 34, Wellington Street, Covent Garden.
REMARKS.—On Saturday last green vegetable trade was brisk—quite a good finish. Only a few Brussels Sprouts come good. Cabbages are a slow trade. Pines are advanced slightly in price. There are on sale now some of that old and the best of all Oranges—the St. Michael. Mistletoe in evidence, but little Holly at present.

SEEDS.

LONDON: December 14.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., describe to-day's seed-market as quite idle, all business in grass and Clover seeds being apparently postponed until the new year. For Rye there is an improved inquiry. Tares meantime show no change. Hemp, Canary, and Millet seeds move off slowly at last week's rates. For Blue Peas and Maroon Beans, former terms are asked. Californian Butter Beans are in good request, whilst choice samples of new Scarlet and White Runners are still offering at very mod. rate prices. The market for Mustard and Rap

seed keeps steady, but Linseed is dull. The Board of Trade Returns give the imports of Clover and grass seeds into the United Kingdom for the eleven months of this year, ending November 30, 1898, as 299,301 cwt., value £572,589, as against 250,862 cwt., value £499,461, for the corresponding period of 1897.

FRUIT AND VEGETABLES.

GLASGOW: December 14. — The following are the averages of the prices recorded since our last report: — Apples, per barrel: Canadian—Kings, 25s. to 26s.; Baldwins, 21s. to 22s.; Greenings, 19s. to 20s.; various, 16s. to 18s.; Spies, 20s. to 21s.; American—Californian Newtown Pippins, 9s. to 10s. per case; Lemons, Messina, 8s. to 14s. per case; do., Palermo, 6s. to 10s. do.; Grapes, home, 1s. to 1s. 9d. per lb.; Guernsey, 6d. to 9d. do.; Oranges—Jaffas, 9s. to 9s. 6d. per case; Valencia, ordinary, 42s. 7s. to 9s. do.; do. large, 10s. to 12s. do.; do. extra large, 12s. to 15s. do.; do. large, 714's, 7s. 6d. to 8s. 6d. do.; Bananas, large bunches, 7s. 6d., 9s., and 11s., per bunch; Pears—Californian Winter Nelis, 16s. to 17s. per case; do., Californian Easter Beurré, 14s. to 16s. do.; Dates, Halawai, 16s. per cwt.; Mistletoe, 12s. to 14s. per crate; Onions, Valencia, 4's, 6s. 6d. to 7s. 6d. per case; do., 5's, 9s. to 10s. do.; Tomatoes, Scotch, 5d. to 8d. per lb.; do., English, 5d. to 7d. do.; do. Tenerife, 5s. and 5s. 3d. per case; Cabbages, 1s. 2d. to 1s. 8d. per dozen; Cauliflowers, 1s. 6d. to 2s. 6d. per dozen; Parsnips, 3s. to 4s. per cwt.; Leeks, 1s. 6d. to 2s. 6d. per dozen bunches; Parsley, 1s. to 1s. 6d. per stone; Potatoes, best, 5d. to 6d. per stone; Carrots, 3s. to 3s. 6d. per cwt.; Lettuce, Cabbage, 1s. 3d. per dozen; Horseradish, 1s. 9d. to 2s. per bundle; Beetroots, 6d. to 7d. per dozen; Brussels Sprouts, 1s. 6d. to 2s. 6d. per stone; Turnips, 3d. to 4d. per bunch; Celery, Scotch, 9d. to 2s. 6d. per bundle; do., English, 1s. to 2s. 6d.

LIVERPOOL: December 14. — Wholesale Vegetable Market: — Potatoes, per cwt., Giants, 1s. 10d. to 2s. 3d.; Main Crop, 2s. 6d. to 3s.; Bruce, 2s. 2d. to 2s. 6d.; Turnips, 6d. to 8d. per doz. bunches, and Swedes, 1s. 1d. to 1s. 3d. per cwt.; Carrots, 6d. to 8d. per doz. bunches, and 2s. 9d. to 3s. 3d. per cwt.; Parsley, 6d. to 8d. per doz. bunches; Onions, English, 5s. 6d. to 6s. 6d. per cwt.; do. foreign, 4s. 9d. to 5s. 3d. per cwt.; Cauliflowers, 1s. 3d. to 3s. 6d. per dozen; Cabbages, 6d. to 1s. per dozen; Celery, 8d. to 1s. 6d. per dozen. *St. John's*: — Potatoes, 10d. to 1s. 2d. per peck; Grapes, English, 2s. to 3s. 6d. per lb.; do., foreign, 4d. to 8d. do.; Pines, English, 5s. each; Cob-nuts, 8d. per lb.; Mushrooms, 1s. 6d. per lb. and 1s. 6d. per basket. *Birkenhead*: Potatoes, 8d. to 10d. per peck; Filberts, 10d. per lb.; Grapes, English, 1s. 6d. to 3s. do.; foreign, 4d. to 8d. do.; Pines, English, 5s. to 10s. each; foreign, 3s. to 5s. do.; Mushrooms 1s. to 1s. 6d. per lb.

CORN.

AVERAGE PRICES OF BRITISH CORN (per imperial qr.), for the week ending December 10, and for the corresponding period of 1897, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1897.	1898.	Difference.
Wheat	s. d. 33 9	s. d. 27 6	— 6 3
Barley	26 0	28 6	+ 2 6
Oats	16 6	17 3	+ 0 9

TRADE NOTICE.

We learn that the business hitherto carried on by M. Charles Van Geert, in Antwerp, under the title "L'Etablissement d'Horticulture et de Pépinières Charles Van Geert," was, on October 17, turned into a company entitled "Firma Société Anonyme hortico-le de Calmthout," with M. Charles Van Geert as manager, and M. Antoine Kort as director, and it will be carried on in the same style as heretofore.

NOTICES TO CORRESPONDENTS.

ADIANTUM FARLEYENSE: A. S. A lower temperature by 5° at night, a light position, less shade given in sunny weather, and more air afforded when the weather is mild, will probably prevent the maladies you deplore. It is wrong practice to stand the pot in a saucer of water, although to stand it over a vessel containing water would tend to good health in the specimen, and counteract the alleged occasional dryness of the air of the house.

BOOKS: W. H. Newbrook. *Hardy Ornamental Flowering Trees and Shrubs*, by A. D. Webster, published at the Gardening World office, 1, Clement's Inn, Strand, W.C. — *Amateur. The Vegetable Garden*, by MM. Vilmorin-Andrieux; English edition published by John Murray, Alber-

marle Street, Piccadilly. — W. F. Stanley. *Handy Book of Fruit Culture under Glass*, by David Thomson; published by Blackwood & Sons. The same gardener also wrote *A Practical Treatise on the Cultivation of the Grape Vine*, which was issued by the same publishers. A more recent work on the Vine is Mr. A. F. Barron's *Vines and Vine Culture*, 3rd Ed., published at the *Journal of Horticulture* office, 12, Mitre Court Chambers, E.C.

CATTLEYA PSEUDO-BULBS BORED INTO BY INSECT: Antwerp. Next week.

CHRYSANTHEMUM SPORT: G. A. King. It is evident that the sport is hardly fixed as yet, and its value therefore cannot be appraised. Cultivate liberally cuttings from this plant next season.

DRESSINGS FOR SCALE ON THE PEACH: Amateur. These are various. You might use clean water, at a temperature not less than 140° Fahr., which kills old as well as young. Gishurst's Compound Soap, at the rate of 4 oz. to 1 gallon of water, should not be employed in houses after January. Petroleum emulsion, as bought of the nurserymen and florists, to be used as directed by the makers. Home-made petroleum emulsion is another, and consists of soap-suds, made with 4 oz. of soft-soap in 1 gallon of rain or soft-water, to which a wineglassful of petroleum is added. This last can be made into an adherent paint by mixing clay and cox-dung with it. See also article in present issue dealing with the use of cyanide of potassium.

HOTWATER-PIPES, AND WOOD-WORK TOUCHING THEM: Winter. No danger whatever.

MELON-RAISING: *Anxious One*. The door placed under the hotwater-pipe, with upright boards at the sides and ends, seems to supply a likely method of getting the Melon-seeds to germinate. The bottom-heat should be about 80°, not higher. We would advise the sides and ends to be made 15 inches rather than 9 inches, as you propose having them; and round the pipe, and at the bottom of the box, to place broken stone and rough cinders, and over these coarsely-sifted leaf-mould (half-decayed leaves) instead of soil. The seed should be sown two in a pot (60's or 48's), using loamy soil. If it can be managed, the top-heat should be kept at about 70°. The difficulty will be the prevention of spindling, due to great distance from the glass. Cannot you make a hot-bed in which to raise and cultivate the young plants? Sow seeds forthwith.

MILDEW ON STRAWBERRIES: *Agricola*. The plants should be placed in a sunny open space a distance away from plants the natural hosts of mildew, and they should not be crowded, but exposed to sunshine on all sides. We would advise the use of sulphide of potassium at the rate of ½ oz. to 1 gallon of water rather than that of flowers-of-sulphur, and it should be so used as a preventive. Mildewed fruits should not be retained on the plants, and the sulphide had better not be employed on the plants when in bearing.

MOLES IN THE GARDEN: X. Y. Z. We cannot recommend methods of poisoning: it is too dangerous to other animals about a place. You should trap them, or appoint some one with good eyesight to watch for them when working in their runs, and with a spud throw them up above ground. They do more good than harm.

MUSHROOM-BED A FAILURE: Jno. Checkley. The place is too cold; the bed has been insufficiently protected from the influence of cold, and has parted with its own warmth as a consequence, and this low temperature has arrested the growth of the Mushrooms, and the spread of the mycelium. The bed moreover should have been spawned at 98°, with a declining heat—not at 85°. The place is too cool for the Mushroom in winter, as attempted in flat beds. You would do better another season to make pyramidal banks, of any length, as for out-of-doors beds—base 5 feet with 4 feet slopes, such a mass of prepared stable-manure keeping its warmth and moisture much longer, and needing less water. Be sure the spawn you make use of has vitality.

NAMES OF FRUIT: A. F. Rochester. 1 and 2, Beurré Clairgeau; 3 and 5, Beurré Diel; 6, Beurré d'Anjou; 4, Much bruised. — John Wood. Apple, Hanwell Souring.—Ashby. Apples, Burr-Knot, a variety very subject to the production of suckers, and these make good stocks for grafting. The variety is only of second-rate quality.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult

the following number.—E. H. C. *Hakea laurina*—A. B. *Euonymus europæus*, common Spindle-bush.—A. M. *Cassinia fulvida*, alias *Diplopappus chrysophyllus*, New Zealand Composite.—Dr. H. M. 1, *Abies magnifica*; 2, *Abies Lowiana*; 3, *Abies Nordmanniana*; 4, *Pinus*, doubtful, perhaps *monticola*; 5, *Pinus inops*; 6, *Abies grandis*; 7, *Abies Lowiana*; 8, *Abies grandis*.

SILVER LEAF DISEASE: *An Old Subscriber*. Unfortunately, no remedy is known for this disease, nor has the cause of it as yet been discovered.

TOBACCO: G. G. B. Having dried the leaves, they must be slightly moistened so as to make them pliant, and then packed in little bundles tied together at the stalk ends in a clean cask to ferment; for unless this be done, the peculiar aroma and narcotic properties are not brought out. The fermentation should last till this aroma has developed, and the leaves taken out of the cask, and dried sufficiently to ensure no further risk of fermentation when they are finally stored in bulk. The fact of fermentation being necessary, obliges the grower to have a considerable quantity of the leaves.

TOMATO FROM THE CANARIES: G. M. The Tomato-plant is attacked by two distinct diseases—(1), the knots on the root are caused by the "root-knot eel-worm," *Herodermia radicola*; (2), a parasitic fungus—*Sclerotinia sclerotiorum*. The spawn of the fungus lives in the tissues of the stem, and when the plant is dying, numerous small black bodies, called sclerotia, are formed in the pith and rind of the stem. If the plants are allowed to lie and rot on the ground, the sclerotia present produce fruit after a period of rest, and inoculate a new crop of Tomatoes. It is obvious that both animal and fungus parasites are present in the soil, and the safest course to pursue is alternation of crops. Do not again plant Tomatoes on infected ground for three years, and in the meantime endeavour to rid the soil of the pests by the use of lime. All diseased plants should be collected and burned, otherwise the disease will spread rapidly. Take care not to convey infected soil to other parts not yet infected, as on too's, cart-wheels, shoes, &c. G. Massee.

VIOLETS IN FRAMES DAMPING-OFF: T. W. We assume that your garden is situated in the London area, and the damping-off to be due to fog, partial absence of sunlight, and the sulphurous-acid, the product of the consumption of coal present in the air in large quantities in the winter months. This substance varies in amount in the month of November per 100 cubic feet of air, from 4.73 to 39.96 milligrammes. Many species of cultivated plants are injured by fog, &c., and we may instance *Cattleya Trianaei*, *Vandas*, *Calanthes*, *Phalænopsis Schilleriana*, and *Angraecum*, among Orchids, whose blossoms drop off, disarticulate wholesale; *Bouvardias* suffer in blossoms and foliage, the latter becoming cupped; *Begonias* that bloom in the winter, *Cucumber-plants*, *Poinsettia* (*Euphorbia*) *pulcherrima*, whose bracts and leaves suffer; *Violas*, &c. The thinner the leaves, and consequently the cuticle, the more rapid the action of the London fog. *The Journal of the Royal Horticultural Society*, vol. xvi., 1893, part 1, contains a report by Professor F. Oliver (with the assistance of Professor F. E. Weiss and Miss M. F. Ewart), which throws much light on the action of urban fog on cultivated plants. We would advise you to read this report if you would combat in some degree the conditions prevailing in the London area.

COMMUNICATIONS RECEIVED. — A. G. Campbell — G. D. — J. C. & Sons. — H. Corroven. — W. M. — S. A. — G. W. A. — A. J. L. — W. Cradwick. — E. T. F. — H. W. W. — G. T. — J. G. W. — G. G. — J. S. — W. H. S. — A. Dunkley (thanks for contribution to Royal Gardeners' Orphan Fund). — J. T. H. — A. P. — Florence. — G. C. — W. B. H. — J. T. B. P. — O. F. Lehenhof. — Dr. Z. — Vienna. — J. du T. de T. — Antwerp (signature illegible). — C. A. S. — E. Bonavia. — J. R. — Falkirk. — S. L. C. — B. Marks. — G. Doolan. — W. Paul. SPECIMENS, PHOTOGRAPHS, &c., RECEIVED WITH THANKS. — G. A. Puris. — Professor Henriquez.

IMPORTANT TO ADVERTISERS. — The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE Gardeners' Chronicle.

SATURDAY, DECEMBER 24, 1898.

THE ANCIENT VINEYARDS OF ENGLAND.

IN an interesting volume on *Monasticism*, by F. J. Feasey, on p. 79, I find the following remarks on the above subject:—

"The culture of the Mulberry and Vine—the latter never now attempted—was brought by them (the monks) to a remarkable success. A vineyard, or winegarth, was an usual adjunct of a convent, and British wines attaining a creditable repute, the Vine was cultivated with profit." In a note, the author states that a vineyard was an adjunct of the monastery at the following places:—St. Albans, St. Edmunds, and Glastonbury. And Dugdale's *Monasticon* gives reference to vineyards at Abingdon, Gloucester, Hantun for Eversham, Muchelney, Pershore, Rochester, and Thorney (Westminster); at Warden, Beds.,* at its dissolution, there was a "great vineyard" and a "little vineyard."

Then, on p. 80, the author writes:—"William of Malmesbury speaks in glowing terms of the excellence of the wine produced from the vineyards in the rich vale of Gloucester, which he compares with English wine in general, which was usually so sour as to twist the mouth of the drinkers." Finally, on p. 118, he says:—"At the dissolution of religious houses, a vineyard of 5 acres was scheduled as part of the possessions of Barking nunnery." Now, sour wine can be made out of the best vineyards.

There are two arts in wine-making: (a), the art of growing the Vine so as to produce fine-flavoured, ripe Grapes; and this is dependent on the soil, the cultivation, the climate, and the favourable seasons; and (b), the art of making good wine, not only out of fine Grapes, but also out of comparatively inferior Grapes. The latter is, perhaps, a more difficult art than that of growing the Vine. Sour wine can be made everywhere. On one occasion I lived eighteen months in Florence. I tried hard to come across a wine there that was not sour, but I did not succeed in finding it. I was directed from this "cantina" to that "cantina." A "cantina" is a wine-cellar attached to a palace, and to a palace is usually attached a vineyard, in the outskirts of Florence.

Well, I tried several of those "cantinas" in quest of a good wine, but invariably found that the Florentine wines were more or less sour. The fact was, that Italian wines all over the peninsula had been considered inferior wines, because the Italians, with their love of *dolce*

far niente had, up to that time, never taken the trouble to make good wines. The "Barolo" of Piedmont is not sour, but the new wine is so astringent that it gathers one's mouth into a purse! The old Barolo, however, is very good. It must not be supposed that in Florence they have not in summer heat enough to mature the Grape. The heat there in summer is so great that all the wealthy people run away to the Apennines, and those that remain fan themselves with a hand-fan most part of the day. The breast-high stone wall on the Lung'arno becomes so hot, even at sundown, that I could not bear to keep my hand on it.

Everybody knows that champagne is a "doctored" wine. It is made out of the ordinary white wine called *vin brut*. It is fermented in barrels, and bottled before the fermentation is completed; then, after a time the bottles are opened dexterously by experts, the sediment is extruded, and liqueur, syrup, and choice old brandy is added, in accordance with the kind of champagne that is intended. The bottles are then re-corked and wired, and stacked in tunnels dug out of the chalk rock, where the temperature never varies, summer or winter.

Out of this *vin brut*, two sections of champagne are manufactured: one for England, which is sourish, and called dry champagne; the other is for the Continent, where they prefer a sweetish champagne.

If the monks, with their rude mode of cultivation, could produce an excellent wine in the rich vale of Gloucester, I firmly believe that the same vale could produce a better wine with the modern modes of cultivation. In Worthing, about two miles north of Broadwater, there is a hill marked on the Ordnance-map "Vineyard Hill." I have not seen this hill, but I have been told that it is the likeliest place for growing and ripening Grapes.

Of course, wine-making, all the world over, depends not only on soil, climate, and management, but also on the "meteorology" of the seasons. Wine-merchants on their lists mark the years of the crack vintages, which means that, in the intercalary years, indifferent wines were produced. Now, why is it that Vine-culture in the open, and wine-making, have ceased in this country, when we are told that excellent wine was produced in monastic times?

One might ask—Why have the abbeys and monasteries been destroyed? And why has the sugar from Sugar-beet driven out the sugar from the sugar-cane? It would be well for some antiquarian to search out the cause of the vineyards of monastic times not having been continued, and why they have never been taken up again in later times. One cause may be suggested. Now-a-days everything is undertaken for money, and if 30 or 40 per cent. cannot be obtained for the outlay, the industry is left severely alone; while the monks cultivated their vineyards for love, and for filling their cellars with good and cheap wine.

Let us see, in conclusion, what is said about this point in the book on *Monasticism*, on p. 72. In those days manual labour was considered fit only for slaves. "But an abbot, mayhap a great man in the world, with the seed-bags on his head, and his monks, not a few of the princes of the earth, carrying manure on their shoulders, and going out to their daily labour in the fields," presented a new spectacle to the astonished world, and one which could not be gainsaid—the spectacle of

voluntary labour, willingly and cheerfully endured. E. Bonavia, M.D.

[Our correspondent omits to allude to the production of wine in the Marquis of Bute's vineyards near Cardiff. About once in five years the produce is so excellent, and fetches so high a price, as to cover the expenses of the indifferent seasons. Ed.]

PALMS OF LORD HOWE'S ISLAND.

The following notes are taken from a paper on the "Vegetation of Lord Howe's Island," by Mr. J. H. Maiden, in the *Proceedings of the Linnean Society of New South Wales*:—

"The mountain roads, or rather tracts, through the Palms extend for miles, and words cannot describe the exquisite beauty of the scenery. After the first few hundred feet of ascent, the Palm in greatest abundance is Curly Palm (*Kentia Belmoreana*), and apart from the beautiful mountain and marine scenery, the marvellous profusion of Palms of all sizes, their overhanging foliage frequently meeting overhead, made an impression on me that will never be effaced from my memory.

Collection of Palm-seeds.—The collection of Palm-seeds (fruits), or 'seeding,' as it is commonly called, is the staple industry of Lord Howe's Island. Seeding is performed by climbing the trees, work which is now mainly done by the boys of the island or hired boys (usually lads indentured through the Charitable Institutions Department of New South Wales). They buckle a leather strap (or strap extemporised from Palm-leaves), pass it over both ankles, and by its aid can 'shin' the tree with a minimum of fatigue. When the spikes of seeds are reached, they are jerked off by a smart downward pull; all the spikes are placed in one hand, and thus carried down to the ground. The fruits (seeds or 'nuts') are then removed from the spike by holding the spike firmly in one hand and pressing each fruit off by the thumb of the other.

The average load down the rocky mountain paths is 1½ bushel for strong boys of, say, fifteen years of age, and perhaps 2 bushels for an ordinary man. The maximum load is 3 bushels, but this is only carried by the strongest young men; and, perhaps, the carrying of so heavy a load has something of bravado in it, for when they arrive at the coast-level they are usually pretty well tired out. The seeds are put into gunny-bags, and all bags are conveyed down the mountain in the 'cubby,' a kind of knapsack arrangement borrowed from New Zealand, for it is a Maori device for carrying their children. The cubby is a sort of parallel braces, and by its use the carrier of a load can have both hands free. A load having been fixed up in the cubby, it is placed on sloping ground, and the bearer lies on his back, places his arms through the knapsack loops, and raises himself to an erect position.

Palm-seed if planted when just changing colour will germinate more readily (Edward King says three months earlier) than those which are dead-ripe. A drawback to dead-ripe seeds is the readiness with which they are attacked by weevil. It is recommended to ship Thatch and Umbrella Palm-seeds when yellowish, as they carry best at that stage.

Thatch Palm.—The leaves of *K. Fosteriana* are, as is well known, used for thatching purposes; the stems, cut to four, were at one time largely used for battens; but now they are rarely put to such use, as the trees are too valuable as seed-yielders. The largest trees of this species are on the Boat Harbour flats, on the south-east side of the island. There they attain a diameter of 18 inches or 2 feet, and a height of 60 feet. This species grows in belts all over the island.

This and the other two Palms (the Curly Palm alone excepted) take twelve months to mature the seeds after the flower appears. The seeds of the Curly Palm are greenish-black when ripe, those of the other three species are red.

Curly Palm.—*Kentia Belmoreana* will not grow,

* I suppose Beds. means Benedictines.

on the coral, sandy ground; it is always found on basalt. This species takes three years to fully mature its seeds after the flower appears.

Umbrella Palm.—*Hedysepe* (Kentia) *Canterburyana* is the largest-fruited Palm of the island. It is called 'Umbrella Palm' owing to its rounded top. It does not descend below 900 feet, and forms a blunt all round Mts. Lidgbird and Gower. Aware that the spathe was unknown, I made diligent search and found one at the foot of a tree, while a boy 'shinned' the tree for fully 50 feet, and brought me the inflorescence in perfect condition. Because of its delicate nature I took a sketch of the spathe on the spot, and also made the notes which follow. I regret my efforts to preserve the inflorescence were not attended with success. My attendant conveyed it tenderly down the mountain, and very few flowers became detached. It was raining, and the air near the coast was laden with saline matter in addition, so that ordinary methods of plant-drying were out of the question. I was destitute of appliances, and decided to plunge it into boiling water, and hung it from a rafter to drain; but the continued damp weather never permitted it to dry, and in spite of all I could do, I was unable to land it in Sydney in good condition.

Mountain Palm.—*Clinostigma Mooreanum*, F. v. M., is exclusively confined to the tops of the highest mountains, where it is subject to considerable cold. Its maximum height is 10 feet.

Uses of Palms.—I have alluded to thatch and battens under *K. Fosteriana*; Palm-leaves are eaten by cattle, but only the tips of the leaf-segments; stock never cropping them close to the rhachis except in cases of extreme hunger. Palms are used for wind-breaks, and are planted for that purpose."

ORCHID NOTES AND GLEANINGS.

"LINDENIA."

THE third and fourth *livraisons* for October and November are issued together. They contain coloured plates and descriptions of the following species and varieties:—

ODONTOGLOSSUM CRISPUM, Lindl., VAR. *RAYON D'OR*, L. Linden.

A very beautiful form of medium size, with broad undulate segments of a rosy-lilac colour. The lip is white, and together with the base of the perianth-segments has a blotch of golden colour traversed by short, radiating, purplish lines; t. 633.

ODONTOGLOSSUM CRISPUM THE CZAR, L. Lind.

A large stellate variety, with lanceolate, undulate segments, white, with a large central chocolate-coloured blotch. The lip is lance-shaped, coloured like the segments, and yellow at the base; t. 634.

MASDEVALLIA CHIMERA.

Discovered by Roez in 1871, but successfully introduced by Wallis; t. 635.

ODONTOGLOSSUM CRISPUM, Loddiges; VAR. *GRANDIFLORUM*, hort.

A species from the Organ Mountains of Brazil, with large, circular, flat flowers, the broad, undulate segments of which are of a rich brown colour. The variety shows these characters to an extreme degree. The plant is difficult to cultivate, or, rather, the cultivator has not yet discovered the suitable treatment for it; t. 636.

CATLEYA TRIANEL, Lindl., VAR. *VILLEGONIERIÆ*.

The name of Madame la Comtesse Marie de Villegontier is connected with this beautiful form of Trianel. Its flowers are of large size, rosy-lilac; the lip, two-lobed in front, has a violet-coloured blotch in front of the yellow throat; t. 637.

CYPRIPEDIUM GOWERIANUM ×, hort.

The result of a cross between *C. Laurenceanum* and *C. Curtisii*. It is a very handsome form, with spotted leaves and large flowers. The standard is

broadly ovate-acute, white, traversed with numerous purple convergent veins. The greenish petals spread at right angles, and are marked on the edges with hairy warts. The lip is large, cylindrical, green, flushed with brownish-purple; t. 638.

LYCASTE DEPPÆI, Lindl., VAR. *PRÆSTANS*, L. Lind.

The variety is remarkable for the size of its flowers, whose outer segments are oblong-acute, greenish, thickly speckled with minute purplish spots; petals much smaller, whitish, enveloping the column. Lip small, included within the petals, three-lobed, anterior lobe lanceolate, lateral ones suborbicular, all yellow, with reddish-brown spots; t. 639.

COCHLIODA NOETZLIANA, Rolfe, VAR. *SUPERBA*.

An unusually richly-coloured variety, which has tasked the describer to give an accurate word-picture. Fortunately, the artist laboured under fewer difficulties, and his plate shows that this variety must be superb in its colouring; t. 640.

A NEW FRUIT.*

A BUMPTIOUS traveller once told the late Dr. Lindley that there were many splendid edible fruits in the Tropics he had visited. "Oh, yes," said the

with a dash of Melon thrown in, and when I say that it is to most others good fruit what *Stachys affinis* tuberifera is to most other good vegetables, my meaning will be pretty clear.

Having read of the *Salpichroa* or *Withamia*, fig. 133, as a new fruiting-plant last spring, I went to a good deal of trouble to get plants, but the result is not very encouraging. The plant belongs to the Solanaceæ, and so is a relative of the Potato, Tomato, Chili, &c. As to growth, the treatment usually given to Tomatoes indoors suits it very well, and we find it fruits most freely when pot-bound or starved a little, and the fruits set most freely in the open air, or when flies and bees obtain access to the flowers.

I send you fresh specimens showing flower and fruit, also a sketch of a flowering and a fruiting-spray.

After having obtained plants from Italy, as well as from a London nursery, I was a little surprised to find that the plant had been growing in a corner of the garden for at least the last twenty years. Once or twice indeed it spread so much that we had tried to dig it out, but its roots and stolons spread so fast that it always re-appeared. As thus rampant on a deep rich border, however, the plant runs all to stalks and leaves, and but rarely has flowers or fruits, but this year a few fruits were produced, owing



FIG. 133.—*SALPICHROA RHOMBOIDEA* IN FLOWER AND FRUIT.

Doctor, tartly, "and very few of them are worth eating, I suppose." Be this as it may, in such cases no one is really convinced without actual trial, and an actual trial of the much talked of "Œufs de Coque," fig. 133, convinces me that it is just worth tasting now and then, but that as a useful fruit it will, in British gardens, at any rate, rank a long way down below the Gooseberry, or even the wild Blackberry of our own hedgerows and fields or lanes.

It is a native of the Argentine, where it forms spreading masses on the bare hot ground, and fruits very freely. The plant forms a straggling, prostrate, bushy mass, its flexuose stems being set with soft small-rounded or ovate leaves, and in the axils of the upper branchlets little white, solitary bell-shaped flowers are produced, not unlike those of the wild Lily of the Valley in form and colour. The flowers are visited freely by flies and bees in our gardens here at home, and are followed by ovoid fruits about the size of a small Olive, the skin being, when ripe, pale yellow, and filled with soft pulp and seeds. The flavour of the soft, ripe fruits is, by some, very much liked, though others do not care for them. To me, they taste like a combination of Nectarine and Pine-apple,

doubtless to the hot season. It is just worth cultivation as a botanical curiosity, but so far as I can see its fruit will never become of any serious economic value. [Agreed! Ed.] F. W. Burbidge.

LAWSON, AND HIS WORKS.

(Concluded from p. 435.)

It is remarkable that Lawson betrayed a consciousness of the reason why a leaf falls; and though he did not put it in practice, a clear perception of the value of root-pruning. It was his desire that every seventh year the orchard should be surface-dressed with a thick layer of rotted manure. Neglect of this dressing he thought to have been the "chief cause why so many orchards are evilly thriving." A lengthy list of annoyances with their several antidotes, furnish a whole chapter. Things have changed since then, for mention is made of "Deere, Goates, Cattell, Horse," as well as "Bullfinch," and "Canker," and, perhaps worst of all "A careless master, and an indiscreet, negligent, or no keeper!"

Another chapter is devoted to the demonstration, by a series of curious arguments of the certainty of trees of all kinds continuing in a fruitful condition for not a few years only, but for many centuries; the Apple for at least ten! Remarks on gathering fruit

* *SALPICHROA RHOMBOIDEA*—Miers, in *Hook. Lond. Journ. of Bot.*, iv., 1845, 321 (Solanaceæ).

are to the point: "Apples are known to be ripe partly by their colour, growing towards a yellow, except the Leather-crat and some Peares and Greening." "No keeping-fruit" is to be gathered "before Michael-tide. Hard winter-fruit and Wardens longer."

does not despise vegetables nor Saffron and "Lycoxas;" but these do not fulfil his ideal of an orchard. "Methinks, hitherto we have but a bare orchard for fruit, and but halfe good so long as it wants these comely ornaments that should give beauty to all our

we descend to the humdrum language of *The Country Housewife's Garden*, which is a sort of addendum to *A New Orchard*, and forms a very short contribution to the current gardening literature of the first James. Its first chapters are merely paragraphs containing little of interest. Several rude knots are engraved, but these disappeared from the later editions. There was a flower-garden and a winter or kitchen-garden, but these displayed very slight distinctive features the one from the other. Many Herbs found a home among the flowers, and in like manner flowers overflowed into the vegetable ground, all the plots of which were edged with flowers, such as Daisies, Pinks, Lavender, &c. The taller plants, of which Hollyhocks and *Malva crispa* are examples, were cultivated in side borders.

A large number of kitchen-garden herbs were aromatic, many of which are not now grown, as in the case of "Alexanders" which have been supplanted by Celery. Cabbages are mentioned in two sorts. "Of this herb, called Cole, our country housewives give their pottage their name, and call them Caell," a dish which Scotchmen and the natives of the north of England will not fail to recognise.

"Of Peny-royall, or Pudding-grasse" it is de-



FIG. 134.—ANOTHER NEW FRUIT:—FEIJOA SELLOWIANA: FLOWERING SHOOT.

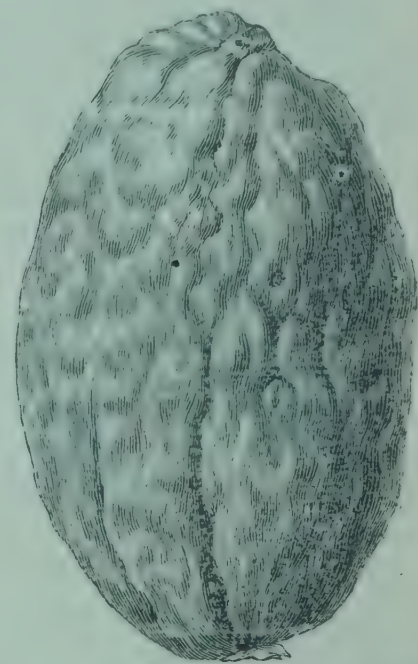


FIG. 135.—FRUIT OF FEIJOA SELLOWIANA: YELLOWISH-GREEN, RICHLY PERFUMED.

clared to be good for the pot, or "hacket meate, or haggas pudding." The "great chieftain o' the pudding race" is generally considered a dish purely Scottish, and indulged in by Scots on great occasions only. But the above and other references show it to have been a not uncommon part of the menu in all parts of England, except perhaps near the metropolis. On very insufficient grounds, it has been recorded a French introduction.

A chapter of general rules closes this brief commentary on small gardens; and the remaining portion is occupied by an essay on "The Husbandry of Bees." R. P. Brotherton.

ANOTHER NEW FRUIT.*

To our distinguished friend, M. Ed. André, the editor of the *Revue Horticole*, we are indebted for specimens showing the foliage of this tree, and for the opportunity of tasting the fruit. From the material supplied by M. André, and from the coloured plate in the *Revue Horticole*, we have prepared our illustrations (figs. 134, 135). The *Feijoa Sellowiana* is a South Brazilian Myrtaceous plant, with thick, leathery foliage, covered with fawn-coloured down on the under surface. What the flowers and fruit are like may be judged from our illustrations; but to attempt to convey any description of the flavour of the fruit in

"Gather the stalks with all; but not the stumps that must beare the next fruit; nor leaves, for moisture putrifies."

In the seventeenth chapter "Ornaments," which I have touched upon in a previous communication—Lawson is at his best. He is grateful for fruit, and

labours." By degrees, the orchard he began to plan has culminated in a garden enclosed where the pleasures of the simplest and purest nature were provided. It was full of "all delights," and an honour to the aged Englishman who planned it.

From the deliciously quaint English of "Ornaments"

* *Feijoa Sellowiana*, Berg., in *Linnaea*, vol. xxix. (1858), p. 258; André, in *Revue Horticole*, vol. lxxv. (1898), p. 264, c. c. colour; Hook. f., in *Bot. Mag.*, t. 7620; *Garden*, 1898.

words would be futile. Suffice it to say, that it is—well, it is “fruity,” acid, aromatic, spicy—we will add only one more adjective—delicious.

The plant was introduced by M. André himself from Uruguay, and the specimens sent to us were ripened in his garden on the sunny shores of Golfe Juan. The residents of that enchanting district therefore have, thanks to M. André, another attraction to the many they had before. In this country a warm greenhouse treatment would suffice, and the method of cultivation required for *Eugenia Ugni* would probably be quite suitable in this case. The petals are hooded, fawn-coloured externally, purplish-crimson within. It would be a valuable introduction into most of our sub-tropical or warm temperate colonies, and will, we trust, secure a more lasting appreciation on the part of the public than has been the case with the *Eugenia Ugni*. Unlike other Myrtaceous plants, the stamens are straight, and not coiled up or twisted in the bud.

“THE ARISTOCRAT” ONION.

As a cross between Ailsa Craig and Rousham Park Hero, “The Aristocrat” will be welcomed as a great acquisition, as much for its large size and handsome appearance as for its long-keeping qualities and delicate flavour. It has been carefully selected for the past four years, and comes very true to type, which is a deep flat—in fact, approaching to a globe-shape. In colour, it is a light straw; neck, very small; shoulder, well up; very solid in texture. It will also prove valuable for ordinary spring sowing, from its great solidity and good keeping qualities. It can be grown to 3 lb. in weight. The bulbs in our illustration (fig. 136, p. 453) averaged 2½ lb., with a girth of 18 to 20 inches. We are indebted to the kindness of Mr. Deverill, of Banbury, for the photograph from which the figure was taken.

MARKET GARDENING IN THE CHANNEL ISLES.

THE development of traffic between the Channel Islands and the ports of Southampton and Weymouth, must be seen to be thoroughly understood. To say that steamers run backward and forward every day, conveys but little to our stock of knowledge, and the bare statement soon slips from the memory; but to see the vessels arrive at Weymouth, freighted with their numerous packages, and to observe the empties as they are unloaded at Guernsey and Jersey, is such a suggestive sight, that the recollection of it cannot easily be effaced, nor the interest and pleasure soon forgotten.

It was on Tuesday, August 23, when standing on the quay at Weymouth, about 5 P.M., that the Great Western Railway Company's steamer *Lynx* entered the harbour. Some fifty men were quickly at work; the officials superintending the unloading, the men handing out the baskets, of which there were nearly 18,000, each weighing from 10 to 14 lb. apiece. These baskets had been carefully packed mostly with Tomatos, and came chiefly from Guernsey. As the baskets were handed over the vessel's side, they were placed on the quay and sorted for the different towns to which they are directed, and straightway were packed again in the luggage-vans of the Great Western Railway trains, that are run on rails right along the landing-stage. There were packages destined for no fewer than sixty-five different towns in this particular cargo, the large towns in the Midlands and the North of England taking by far the larger portion; such places as Manchester, Liverpool, Sheffield, Birmingham, having one or more trucks exclusively. The scene was a lively one, as each man endeavoured to keep to his allotted duty, and hand on his package as rapidly as he could. Beside the baskets filled with Tomatos, there were many large boxes containing fruit; these are lifted out by the cranes and packed into the trucks to which they are specially consigned. The entire cargo is soon unloaded and on board the train, so that in most cases the goods will be delivered the following morning. The bustle and activity of one such boat is repeated every day, sometimes

twice a day; the special cargo vessels bringing, of course, larger consignments. Similar busy scenes may be observed at Southampton.

GUERNSEY.

A few days afterwards I took passage by the G.W.R. steamer, *Ibez*, had a most pleasant trip across the Channel, and after a run of just four hours, arrived at the harbour of St. Peter's Port, Guernsey, where the first halt is made. Here the first thing that struck one on landing was the large stacks of empty baskets, and the number that were being taken from the vessel just in. Here the baskets, tied together in fours, are sorted, and placed in heaps, and during the daytime they are carted away to their respective owners, ready for packing again.

In the evening I strolled into the town, and one of the things that arrested my attention was a tall stalk, some 18 feet high, with shoots 3 feet in length, fastened just outside a tobacconist's shop. This was really a Jersey Cabbage-stalk. This I was given to understand was an exceptionally fine stem. The average height is about 10 feet, as I had plenty of chances of observing a few days later, when visiting Jersey. As is doubtless well known, these Cabbages are grown chiefly for the cattle, and the leaves are constantly being stripped off, and given as forage to the cows tethered in the meadows, as they are here. The Cabbage continues to grow in height, and when a height of 8 or 10 feet is reached, they are pulled up and dried, then cut into lengths, dressed, varnished, and mounted, and sold by hundreds as walking-sticks—and useful articles they are, many visitors taking back with them bundles of sticks, retaining or distributing them among their friends, as souvenirs of their visit to the Channel Islands.

I find that during the first week in August one vessel, the *Dora*, arrived at Southampton from Guernsey with over 19,000 baskets of Tomatos, &c., and another with 1,000 packages of Grapes and plants; the *Lydia* with 9,000 packages of plants, fruit, and Tomatos from the same island. While to Weymouth the Great Western Railway boat, *Lynx*, brought over 16,000 packages from Jersey and Guernsey, and the *Gazelle* carried over 25,000. This will give some idea of the regular traffic, and besides those boats already mentioned, there are others trading to Weymouth and to Southampton.

The Tomato industry of Guernsey is now a well-established and most important one, and the culture of Grapes would seem to be almost on a par with it, whilst early Beans form a most valuable crop, and as might be expected much attention is now given to their culture. Guernsey devotes, doubtless, more space and labour to these specialties than is the case at Jersey; there the conditions are much more favourable to fruit growing, and as a consequence, Grapes and Pears are grown in a manner and in such quantities that it is a great pleasure to see them. The aspect and surroundings of the town strike one as being somewhat curious, scarcely foreign, yet different to what one has hitherto been accustomed. The inhabitants are a busy, thrifty race, always on the go, steadily pursuing their labours, with a considerable air of independence about them. That the natives have made great advance in the culture of these products, have added house to house, until in some districts almost every available spot seems covered with glass erections, will strike the casual observer as he journeys just only a little distance from the esplanade; but to see the extent and the working of the business, one must pass through the various establishments, and without asking too many questions observe the methods, ways, and practices, and make a note whenever practicable. Many, however, are quite willing to impart information, and I am indebted to them for the privilege of passing through their extensive premises. I visited many, and if all names are not mentioned, it is no intentional discourtesy.

There is great similarity in the methods of the many growers, and a description of one will often be just what one would like to have said of the next one visited. The number of glass-houses on the island is very large, and fresh ones are being con-

stantly erected; for it would seem there are fair returns and satisfactory results in Grape and Tomato growing even yet. One day I was taken to one of the pioneers in Grape and Tomato culture, Mr. Martin. Some of the houses here would now be considered small, as they are but 100 feet × 16 feet, a lean-to; or 150 feet × 40 feet span; 100 feet × 30 feet, 210 feet × 30 feet span-roofs; and others of similar dimensions. The size of these houses is, of course, regulated by the space of ground that can be set apart for them, for all growers have not the unlimited area that some of those of more recent development possess. From this place, during the season, some 2 cwt. of Grapes are sent away almost every day; some of the houses had the crops all gathered, and in others a good portion was cut; later houses were coming on, and here fine crops were hanging that were quite up to the top-mark. Fine bunches of Black Alicante and Gros Colmar, large berries, and colouring well.

TOMATOS.

Of Tomatos, there are also very large quantities grown; and if the houses here are somewhat less in size to many others, the method of culture pursued here is just that what is adopted in almost all others. Houses some 200 × 36 feet will have a path trodden right through the middle from end to end; then on each side, there being no stages, the ground is well dug and enriched, and generally twelve Tomato-plants are put in from path to wall, and a similar number on the opposite border—thus, twenty-four plants reach right across the house. These rows are 3 feet apart, leaving sufficient space to pass along to attend to the plants, watering, &c. As the plants grow, they are secured to strings fixed to the roof, and fastened by a peg in the soil, so that each plant is kept to its separate support. The plants are allowed to run up some 6 and 8 feet, all side-shoots are picked off, and every encouragement is given, with sun-heat, manure-water, and fertilisers, to develop strong plants and healthy foliage. Clusters of fruit quickly form on the lower part of the stems, and growth advancing rapidly, the fresh clusters appear, and the first fruits will begin to colour.

When a number of such houses are devoted to the Tomato, the gathering of the fruit, the grading, packing, and dispatch to the steamer's side is a busy and most important part of the day's duties. The weight from one house I was informed had been no less than 6 tons, and from the earliest consignments in May right up to the late autumn the same processes are carried on.

The fruit outside follows immediately that grown under glass, and though not uniformly so large, is nevertheless good marketable produce.

Into another establishment I wended my way, and found the whole of the houses, which are of great length and width, occupied with Tomatos. In some, the crop was cleared out completely, and preparation would soon be made for Potatos; in others, a late batch of Tomatos were planted, and were just setting fruit. From 22 to 23 tons of Tomatos, I was told, had been sent out in one season from this place.

BEANS, ETC.

A profitable part of the business now, and one that fills most advantageously some spare time, is the growing and dispatch to the mainland of Runner Beans; but Sutton's climbing Bean, Canadian Wonder, and Zebra, are sorts very often mentioned. These are grown like the Tomatos, running them up on strings, and bringing them into a bearing condition as rapidly as possible. These are started very early in the spring, and occupy the houses for three or four months as the case may be, and from 1 to 4 tons during the season is by no means an exceptional quantity to gather on a place not considered one of the largest. The prices obtained for these early Beans would warrant an even greater quantity being grown; but as it is, where the house can be spared even for a short time only, a sowing will be made, and a crop secured. It is singular to notice the fondness with which many growers cling to their special variety of Beans and Tomatos; of the latter the large round being the favourite, and when of

one's own saving, why then, of course, so much the better.

In another establishment I found that Beans and Tomatos were the principal items, with large quantities of Chrysanthemums in pots, also breadths planted out for the supply of cut flowers for export.

On the following day I was permitted to inspect some houses 300 feet by 40, where Grapes are grown in splendid style, the greater portion of the goods from this particular firm being consigned to Mr. G. Monro, Covent Garden. Beans and Tomatos also in their respective houses, and Chrysanthemums in pots and beds occupying much room. From another I gathered information that leads me to believe that the proprietor, who rejoices in a thorough Lancashire name, is rather more diverse in his energies and labours, for in his place 30 tons of Tomatos, 7 tons of Grapes, 4 tons of Beans, besides Cucumbers and Melons, are grown in houses, many of which are

well-shouldered, berries of large size, and finely coloured. This house is just a model.

From this I passed to a lean-to vinery, 700 feet by 18 feet, in which just 456 canes were planted twenty-two years ago. No special preparation had been made in the border outside, where all were planted in the ordinary soil, and brought into the house through small holes in the front wall, which is about 18 inches high, from which the rafters rise to the back wall. This house is unheated, no pipes being fixed anywhere, so the canes start into growth about February, and come on gradually, the various processes of thinning, tying, &c., are carefully attended to, each operation, as may be imagined, taking a considerable amount of time. To look through this house, with its wonderful crop, which will run to five tons and more, is a sight not soon forgotten. Everyday consignments are sent to London, for as soon as the crop is fit the cutting commences, and is

might say fields, devoted to their culture. Tens of thousands of sort after sort are now being planted in quarters specially prepared. This industry is increasing every year, and bulbs of the finest varieties are grown to a large extent; whilst the heaps of bulbs in the sheds and cold vineries is astonishing. As quickly as the ground can be prepared, they are taken out and planted.

CHRYSANTHEMUMS.

The thousands of choice Chrysanthemums in pots, uniform in height, stout, and vigorous, are also a very important item in the business of this firm, for every good thing that can be assured of quick sale is grown in quantity and in excellent style. Show blooms are not grown, but good market flowers, plenty of them, from October onward, as long as can possibly be managed. Large quarters are planted with Chrysanthemums, and were 3 feet high, carefully secured by stakes and strings.

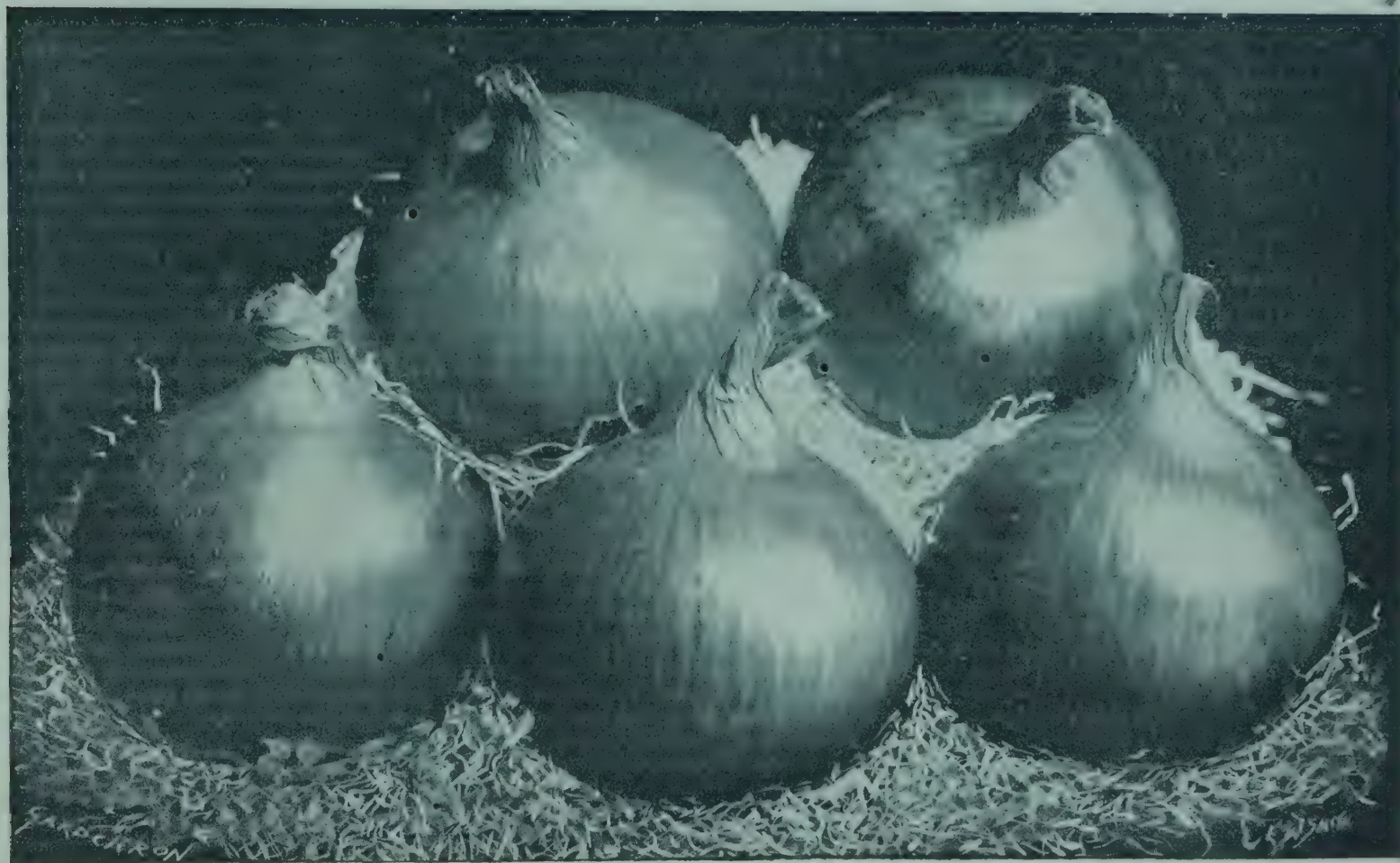


FIG. 136.—A DISH OF THE "ARISTOCRAT" ONION: THE BULBS AVERAGING $2\frac{1}{2}$ LB. IN WEIGHT (SEE P. 452).

300 feet long and 45 feet wide. A grand lot of Black Alicante was being cut and sent away every day; these would be followed by a heavy crop of Gros Colmar, colouring splendidly, without the aid of fire-heat—or but a small amount, if the nights should prove to turn in cold.

GRAPES.

At the Longfield Nursery I was fortunate in meeting Mr. A. T. Hansford, who has vineries that this season have done remarkably well. This place is in good keeping, there being some nice flower-beds, very gay, with capital Palms, Dracænas, &c., planted in beds and borders. I first entered a house 65 feet by 40 feet, full of Black Alicante; these were planted six years ago, and now are in splendid bearing condition. The house, which is span-roofed, has forty canes on each side, and according to the rate of space already cleared, just a ton and a half is the weight that will be taken from this roof. Here the crop hangs in superb condition, many of the bunches being fit for the exhibition-boards—regular in size,

continued till finished. The first bunches in this house were cut on July 26, and by the end of September all would have been cleared away.

Three more establishments were visited, where houses of 100, 200, and 300 feet by 40 were utilised for Grapes, Tomatos, and Beans, each following one another as rapidly as possible.

DAFFODILS, ETC.

Besides the articles mentioned, there are the Daffodils, Iris, and Freesias, the former in large beds and fields, the work of planting now proceeding; the Freesias put in boxes, a hundred or more boxes at a batch, whole pits and frames filled with them, in which thousands are already well up, making strong growth—many of these would be stood on the vinery floors, and bloom will soon make an appearance.

A visit was also made to Mr. Weeton's, where an immense quantity of Daffodils is grown, choice sorts by the thousands; Sir Watkin, Empress, Emperor, and others, even more rare, have large beds, one

A large portion of these would flower where they were, the flowers being of fair size and substance.

TRAVELLING GREENHOUSES.

A new departure in buildings is being adopted here, viz., travelling greenhouses (see *Gardeners' Chronicle*, May 26, 1894, fig. 83). These are 60 feet by 25 feet, and as structures appear to be all that could be desired. When building operations commence, the space to be utilised is first set out, when stout low pillars are built, on which a strong iron rail is fixed, the whole of the structure rests on these rails, on stout grooved wheels, and the ends, in which are the doors, are stoutly boarded, and so are stronger than if glass were used. I was assured they can be moved along quite easily, and have proved to be most serviceable. For bulb culture, and the hastening of flowers for cutting, the plan is to draw the house over one portion, and hasten the crop on this part, then, when this is finished, to draw the cover along to another part full of plants, which were planted

between the rails, and hasten and secure this second lot, and then draw it on to a third piece. If a house is, say, 60 feet in length, the piers and rails will run for, say, 180 feet, by which means three spaces of equal length can be utilised; of course, it remains to be seen whether the plan is profitable enough to warrant still further adoption. Some houses have boiler and pipes fitted, which travel with the houses, these under notice have none at present. The Horticultural Travelling Structures Co., Ltd., would seem, by their prospectus, to be willing to erect these houses anywhere, and adapt them for any purpose. *Our Special Commissioner.*

(To be continued.)

THE HARDY HEATHS.

(Continued from p. 432.)

E. ciliaris.—Belonging to the same section of the genus as *E. Tetralix*, this species may, however, be readily distinguished by the leaves alone. These are borne three together (not four) in a whorl; they are ovate, and broader, and the margins are less revolute. The plant does not grow much more than a foot in height, but has long, wiry, straggling stems. The flowers are borne in an often elongated raceme at the end of the stem, the corolla large and rosy-purple. The species is a native of Britain, but is not common; it has been found in Cornwall, in Dorset, and in Galway. It flowers at the same time as *E. Tetralix* (July onwards), but near London is a less satisfactory plant under cultivation; this, however, is probably owing to its sensitiveness to smoke and fog, for in the neighbouring counties it thrives admirably, and is a beautiful plant.

E. cinerea.—Some of the loveliest colours to be found among the hardy *Ericas* occur in the varieties of this species, whose flowers range from pure white to rich purple and red. It is a British plant, and is widely spread over the kingdom. I have seen it, although never in large masses, on the Yorkshire moors, also in Devon and Somerset, where, on the contrary, it is very plentiful. On Exmoor it grows along with the dwarf Gorse (*Ulex nanus*), the two often growing together, and forming one close, cushion-like tuft. Flowering at the same time, they make a delightful combination of purple and gold. Near Porlock and Dunster, one may walk for miles and never be out of sight of these charming plants, which are at their best in August. *Erica cinerea* is a glabrous plant 6 to 12 inches high, with tiny dark green leaves often only one-eighth of an inch long, and borne in whorls of three. The flowers appear in dense racemes 1 inch to 3 inches long, and are typically of a bright reddish-purple. There are some half-dozen colour varieties offered by nurserymen, every one of which is worth growing. The best of them perhaps are atropurpurea and atropurpurea. A curious variety was discovered in 1897 by Mr. E. M. Holmes. In this the corolla is cut into several segments, sometimes almost or quite to the base, making it polypetalous. We propose to call it var. *polypetala*. The species is quite hardy, but with us it is not so strong and thriving under various conditions as the spring-flowering *E. carnea* is.

E. lusitanica (*E. codonodes*).—The species with which this is most likely to be confounded is *E. arborea*, both having hairy stems, and much the same general appearance. It may possibly be a geographical form of that species. It differs in the following particulars:—The wood is not so hairy as in *E. arborea*, the foliage is denser, and the individual leaf finer and more slender, whilst the corolla is not only larger, but more truly bell-shaped than the globular one of *E. arborea*. It has been known to attain a height of 10 to 12 feet in Sussex, but owing to its being unable to withstand our hardest winters, it is only in the most favoured localities like the Sussex coast and Cornwall that it ever gets so large. The flowers are white, with sometimes a tinge of pink, and have a slight vanilla odour. It flowers from February to May. The wonderful profusion of its blossoms, together with their purity and grace, make this one of the loveliest of early-flowering shrubs; especially in mild localities. It comes from Spain and Portugal.

E. Mackaii (Mackay's Heath).—This plant is very nearly allied to *E. Tetralix*, but differs in the following characters:—The leaves and sepals are both ciliate, as in *E. Tetralix*, but are quite devoid of down; its stems are more inclined to branch near the top; the corolla (of a pale rose) is shorter, and broader. The arrangement of the leaves and flowers is the same. By some authorities this is made a variety of *E. Tetralix*. It was first found between Roundstone Bay and Clifden, in co. Galway, Ireland, and has since been collected in Spain. It is a variable plant, and some of its forms closely approach *E. Tetralix*, but it is always charming, and succeeds admirably under cultivation.

E. Maweanæ ×.—Like the better-known *E. Watsoni*, this is supposed to be a hybrid between *E. ciliaris* and *E. Tetralix*. It has the ciliate leaves of the former, with their glaucous under-surface, but is a sturdier plant. The flowers are large, purple-crimson, and produced in dense cylindrical racemes. Whilst, of the supposed parents, *E. Watsoni* more nearly approaches *E. Tetralix*, this leans towards *E. ciliaris*. It is a very beautiful plant, evidently rare, and discovered in 1882.

E. mediterranea.—The specific name of this Heath appears to have been given to it by Linnaeus under a misapprehension, for, according to Moggridge—the author of the *Flora of Mentone*—it is never found on the shores of the Mediterranean. It is, rather, a Biscayan plant, being a native of south-west France (Gironde, &c.), and Spain. A form of it is also found in the west of Ireland (counties Galway and Mayo). It is as hardy as any of the South European Heaths, and gets to be 5 to 6 feet high; Loudon notes a specimen at Sion which was 10 feet high prior to the great winter of 1837–38, but was then killed to the ground. It is quite glabrous, and its leaves are in whorls of four or six. The flowers are borne in the leaf-axils near the ends of the shoots, making a crowded terminal raceme; they are pitcher-shaped, and bright rosy-red. There is a fragrant white-flowering variety (*alba*), and another, very distinct, with glaucous foliage (var. *glauca*). The species and these two varieties flower from March to May.

Var. *hibernica* (syn. *E. hibernica*), is the form alluded to above that is found in the west of Ireland. It differs chiefly from the Continental type in its shorter, wider corolla, and in being less tree-like in habit—it is from 1½ to 5 feet high. It is also rather later in commencing to flower.

Var. *hybrida* (or *E. hybrida*).—Some authorities, acquainted, I should imagine, with dried specimens only, have considered *E. mediterranea* and *E. carnea* to be the same species. No doubt they are closely allied—David Don placed them, along with *E. vagans* and *E. multiflora*, in a separate genus called *Gypocallis*, because of the exerted stamens and other characters—but a connecting link between them is furnished by this variety. From the name one would conclude it was a garden hybrid, but if so, I have not been able to find by whom it was raised. Possibly it is a wild form intermediate between the two, although it flowers much earlier than either. In any case it is a most beautiful and useful Heath, worth growing in large masses for winter effect. It is a stronger and taller grower than *E. carnea*, but still dwarf. It is generally nicely in flower by early December, and continues in beauty till April and May. This season some of its flowers were open in the first days of November. *W. J. Bean, Arboretum, Kew.*

(To be continued.)

THE WEEK'S WORK.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Newly Planted Trees.—The mild weather has been in favour of all recently-planted fruit trees, but severe frosts come in the months of January and February, so that all transplanting should be now completed. Standard fruit trees should be securely staked, in order to prevent wind-waving, for, if allowed to rock about, a water-holding receptacle forms at the collar, and when the water freezes, much damage is done to the trees. The best form of support for

standard trees consists of two stout stakes, one on each side of the tree, driven into the soil about 9 inches from the stem, and reaching as high as the lowest branches, and a cross-piece is nailed to them about 2 inches below the tops, and the stem is secured to this with tarred cord, a piece of india-rubber hose being wrapped round the stem to prevent injury to the bark. Sometimes hay and straw serve the same purpose, but these things harbour insects, and are therefore objectionable. The lower ends of the stakes should be charred, and then dipped into boiling tar or creosote to increase their durability. Some secure protection against hares and rabbits and cattle should be placed to all fruit trees in orchards and fields, using against the rodents wire-netting placed 3 feet high around the stem, and let into the ground 4 inches. If left 2 inches clear of the stem it will serve for several years; more room than this would allow rabbits or hares to jump inside and gnaw the bark. When brought 4 feet up the stem it is a protection against sheep. To ward off other animals it requires wooden or iron tree-guards, which add much to the cost of planting orchards, and it is well to find other quarters for the animals. The soil round about trees recently planted should be mulched off before it gets frozen, with partially-decayed litter from the stables or cow-sheds, and, failing this, half-decayed leaves may be used instead.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Dorset.

Odontoglossums.—At this season many of the species of *Odontoglossum*, namely, *O. crispum*, *Halli*, *triumphans*, and *hystrix* show their flower-spikes, and if slugs and snails exist in the house it is very necessary that the gardener search for them at night when they are feeding, otherwise many flower-spikes will be damaged or lost. In most collections are some valuable *Odontoglossums*, and of all these should be stood on flower-pots inverted in pans filled with water, and even then a constant watch is necessary, for slugs may lurk in the potting material. A piece of wadding may be wrapped around the base of the spike as a further defence against these marauders. *Odontoglossum citrosimum* in its cultural requirements and in its mode of flowering differs from other *Odontoglossums*; and it demands, when in full growth, to be hung up in a very light and airy position in the Cattleya-house, but at this season, growth being at an end, the plant is the better for a slightly more moderate degree of heat, and a comparatively drier air. In order to successfully bloom the plant a long period of rest is needed. Hang the plant in the full sunlight, and as the pseudo-bulbs mature afford less and less water, until the supply ceases. The pseudo-bulbs will soon shrivel, but shrivelling does not affect the welfare of the plant. Sometimes a few of the plants will start to grow again in the winter, but if they are treated similarly to the other plants at rest such growth will scarcely advance at all, and will seldom fail to produce flower-spikes at the right time. *O. Reichenheimi* and *O. laeve* should also be afforded a long rest after the swelling of the new pseudo-bulbs is finished, but these must not be allowed to shrivel greatly. Plants of *Laelia autumnalis*, *L. alba*, *L. majalis*, and *L. Marriottiana* should, now that their new growths are fully ripened, be hung close to the roof at the warmer end of the cool-house, and not be afforded any water unless the pseudo-bulbs commence to shrivel, which they rarely do, owing to the moist conditions maintained in this division.

Masdevallias.—Amongst *Masdevallias* which bloom at this season, the white *M. tovarensis* stands out conspicuously, with flowers arranged compactly and without stiffness on the top of a stem varying in length from 4 to 8 inches. These spikes, as is now well known, if not cut below the scape from which the flowers spring, will produce flowers the following year; but it is not advisable to retain these old flower-spikes, as without doubt their retention tends to weaken the plant. To do this it is necessary to cut the flowers with so short a stalk as to render them almost useless. Being a compact-growing plant, and throwing its spikes of three or four flowers well above the foliage, this *M. tovarensis* is a valuable decorative plant. Unfortunately, for this purpose the plant suffers from the aridity of the dwelling. In an intermediate, airy house the flowers last in perfection for five or six weeks. *M. tovarensis* may be grown well in pots, which must be properly drained with crocks and charcoal, brought up to within 1 inch of the rim. Over this a layer of sphagnum-moss should be laid, and the plant fixed

in a conical mound of equal parts of fibrous peat and fresh sphagnum-moss, many of the heads of the latter being kept at the surface, so as to form a living mat of moss. Avoid potting the plant tightly. As regards temperature, that of the cool Odontoglossum-house, or a shady frame form suitable places from April till October, and the intermediate-house from October till April. During the time the plant is in the intermediate-house, it should be kept near the glass on the shady side, and receive air on all favourable occasions.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Zonal Pelargoniums.—The double and semi-double flowered varieties open their flowers more satisfactorily when afforded a somewhat higher temperature than is found necessary with the single-flowered varieties; a temperature 5° higher is found quite sufficient. Plants that have been kept in a greenhouse may now be afforded 55° of warmth. With the present damp and close weather ventilation is very essential, dampness being very injurious, and must be counteracted by the use of the hot-water pipes, together with a modicum of air afforded by the upper openings. Weak manure-water afforded occasionally, and a little artificial manure sprinkled on the soil assist the plants considerably.

Palms.—Work in general not being now so pressing, a good chance is afforded the gardener to thoroughly overhaul his Palms, most of which will have become infested with white scale. It is well, as has been said in an earlier Calendar, to syringe the plants a few hours previously to commencing with a weak petroleum emulsion, which is made by adding a wineglassful of the oil to a strong lye made of soft soap, as this renders the dirt and scale easy of removal. The cleaning is best effected with a bit of sponge, a tooth-brush being found useful for cleaning parts the sponge cannot reach. Where *Seaforthias* and other intermediate-house species are grown with those requiring more warmth, the plants should be closely examined for Thrips, as these, if not destroyed on their first appearance, soon disfigure the leaves. *Kentia Fosteriana* and *K. Belmoreana* will stand more rough treatment than most other Palms. *Phoenix rupicola* makes a handsome vase plant, but it is slow of growth in the early stages. *P. reclinata* and *P. dactylifera* are useful species, growing to a large size if afforded the necessary root space. *Cocos Weddelliana*, *C. plumosa*, *Geonoma gracilis*, *Areca lutescens*, *A. crinita*, and *Latania borbonica* are all good and beautiful decorative Palms. No repotting of Palms should be performed before May, unless the state of the soil is very bad.

Abutilons.—The flowers of the different varieties are of use in table and other decorations, and the yellow ones especially so; and in order to have some of them soon some healthy specimens may be placed in the intermediate-house, where they will soon show flower, and continue to bloom for several months. If *Abutilons* can be planted out in a cool house in the summer, and afforded gentle warmth in the winter months, they yield a large quantity of flowers over a long period of time. Cuttings of *Panicum variegata*, *Selaginellas*, the creeping *Tradescantias*, *Pittonias*, *Pilea muscosa*, and *P. muscosa nana* should be struck in quantity for indoor decorative work.

Libonia Penrhosiensis.—Where large plants are desired, cuttings should be rooted early, and if two or three plants are cut back slightly and placed in the stove, shoots fit for making cuttings will soon be obtainable.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford, Kent.

Aquilegias.—These hardy perennial plants are worthy of a foremost place in the border, and not being particular as to soil. The foliage of the *Aquilegia* is of an ornamental character, the flowers are exceedingly beautiful, light, and graceful, and especially useful when cut for filling vases, &c. *A. californica* grows from 2 to 3 feet high, possesses flowers of a shade of scarlet; those of *A. glandulosa* are of a rich blue, with a white corolla, a very fine variety; *A. chrysantha* has flowers of a golden yellow tint, the spikes of the bloom being of considerable length. It reaches a height of 2 to 3 feet; and when plants are left undisturbed for some years, they form bushes sometimes 3 feet in diameter. *A. alba* is the white-flowered variety. In *A. coerula* we have violet, blue, and white flowers abundantly produced

A. Skinneri is a dwarfier plant than the others, and the colours in the flowers are red and green. *Aquilegias* may be planted, provided the clumps are strong, at this season, otherwise early in the month of March is a better date. Small plants reared in pots may be put out in the borders in April. Slugs are very partial to the young plants, but do no harm to old clumps.

Anemone japonica.—This is a good border plant, looking equally well on a rockery, or a clump on the lawn. The plant in all its varieties spreads fast by means of underground rhizomes, and needs, therefore, ample space. It does not like removal, and knowing this, a good preparation of the soil is very necessary, especially deep digging and manuring, and if a good proportion of peat and leaf-soil be added to the staple, the results will be the more satisfactory. There are rose, red, and white varieties, and a few double-flowered varieties, but none is so pretty as the white single-flowered one. In good soil they reach a height of 3 feet.

Delphiniums.—A loamy soil of good quality, enriched when necessary with manure or leaf-mould, and the plants left undisturbed for years, suit the requirements of these best of all hardy blue-flowered perennials. The pale blue-coloured varieties, when planted in large clumps, make a splendid display; and all are useful in the garden. The varieties may be dug up and divided and planted at this season; a succession of bloom may be obtained by dividing and planting at different times. After planting mulch with leaf-mould or short manure. *Delphiniums* produce seed freely, which may be sown in beds in the open air. Rare species and varieties may be struck from cuttings of the succulent shoots taken when they are 6 inches long, and struck in pots filled with sandy soil, or in beds under hand-glasses or cold frames.

General Remarks.—In some parts of the country the mowing-machine will be required to give the lawn a smooth appearance. Leaves should be swept up and wheeled to the leaf heap; but when collected among shrubs in any quantity, it is a good practice to sprinkle soil over them, so that the wind cannot remove them. They will then form good manure for the shrubs. See that the transplanting and planting of all kinds of deciduous shrubs and trees are finished at an early date in March and April.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Vegetables growing in Pits and Frames.—It is very essential that the glass should be kept clean at this dull season, so as to admit all the sunlight possible. Beyond this much care is required in affording water, and while taking care that the plants do not suffer from lack of moisture in the soil, no more of it should be applied than is actually necessary, and that in the forenoon. The more tender kinds of vegetables in frames should be protected at night if frost be imminent. If hot beds are in use, the heat must be maintained by linings of warm dung prepared in readiness. Cauliflower plants in cold frames and pits should be freely exposed to the air at all times when it does not rain or freeze.

Forcing Department.—Continue to place roots of *Asparagus*, *Seakale*, and *Rhubarb* in heat, in quantity sufficient to meet the demand. By whatever method *Seakale* is forced, the degree of warmth should be kept steady at 60° to 62°, with aerial moisture in moderation, and total darkness maintained in the structure, be it Mushroom-house, hot-water pit, or a simple excavation in the ground. The same holds good of *Rhubarb* when forced, excepting that for the present 58° to 60° is a more suitable degree of warmth. Let the heads of *Seakale* be removed when 5 to 6 inches high. The pits or frames containing *Asparagus* should have a top heat of 65° and a bottom heat of 75°, the soil of the bed being afforded tepid water when it approaches dryness. *Seakale* and *Asparagus* shoots should be cut before they become drawn, and if not required for immediate use they may be stood in trays filled with water until wanted. Another lot of French Beans may be sown in small pots, or in a bed in a heated pit, following former directions. Cover thickly Mushroom-beds built in the open air or in unheated sheds. Keep up the supply of Tarragon and Spear Mint, by placing in a warm, moist house or pit, boxes or pots filled with the roots.

Spinach.—It is a good plan to place frame-lights or glazed Pea-protectors over a few rows of Spinach,

shifting them to other rows when the finest leaves are gathered. Our Spinach is dying wholesale. [See answer in Notices to Correspondents on this subject. —Ed.] Had it not been for Zealand Spinach, of which we have a good supply, we should have been almost without this useful vegetable.

Roots in Store.—On wet days the gardeners should be set to sort the stores of Onions, Shallots, Garlic, Potatoes for seed, and for kitchen use, removing those which are decayed or diseased.

Potatoes and other Roots in Pits.—Sufficient soil to prevent the entrance of frost and moisture should be heaped on the outside, and should hard frost occur this covering should be supplemented with straw or bracken.

Cabbage.—A few rows may be planted now; should the weather be open for a few more weeks, they will quickly root, and turn in use fully in early summer. Red Cabbage for pickling should now be cut.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of SALISBURY, Hatfield House, Herts.

The Cucumber-house.—The mild weather enjoyed of late cannot but have been favourable for the growth of the bine, and the fruiting of the plants. It has rendered the maintenance of a genial atmosphere less difficult than it would have been if the weather had been frosty. The range of the temperature may be from about 65° by night, to 70° or 73°, allowing with sun-heat a rise of 5° to 10°. If the days promise to be sunny, let the bine be syringed in the morning, but at other times it will be enough to damp the floors and the walls several times in a day. Keep the soil moderately moist. The ordinary routine must be followed in all other matters. Those plants which the gardener manages to keep in a clean and healthy condition until the middle of January, will start at about that time into a more vigorous growth, showing fruit freely; and when at length their energy is exhausted, their place will be taken by young plants. If greenfly infest the plants ever so little, use means to get rid of the pest without delay.

Musas.—Although the fruits of the commone varieties of Banana are imported into this country in large quantities, the plants may be grown where large stoves exist with but little labour, their requirements being equally met whether the plants are planted in big pots, tubs, or in brick receptacles. By the first and second methods the plants can be made to serve as decorative material; but it is when planted in borders or brick-chambers that the finest clusters of fruit are produced. The chief requirements of the *Musa* are heat, full sunlight, plenty of moisture at the root and in the air, a rich loamy soil, and good drainage. *Musas* may be grown at the back of a lean-to-house, or in the central part of a span-roofed-house, where the height is not less than 10 feet. In this country it is mostly *Musa Cavendishi* that is generally cultivated, although in tropical countries its fruits are considered of very little account. The natural mode of increase is by means of suckers, which, emitted from the root-stock about the time the bunch of fruit shows, should be detached when they have made sufficient roots to support them. If necessary, these may be potted or planted out forthwith, whichever method of culture be pursued. When in active growth, manure-water is beneficial if afforded at every third or fifth application of moisture, but during the ripening of the fruits no water ought to be afforded, but the plant should be treated like a Pine-apple plant carrying ripening fruit. As the plant is naturally short-lived, there is no need to afford it a distinct period of rest. The *Musa*-plants that are bearing or showing fruit, should have the number of suckers reduced to one or two at the most, and the stem that has borne fruit should be cut off at the ground-level when all of the best fruits have been removed. About 10 inches of the extremities of the bunch should be removed as soon as it is seen what the length will be, as the fruits at that end seldom attain to more than half-size.

PLANT PORTRAITS.

HYPERICUM MOSERIANUM. Garden, December 17.
IRIS JUNCEA and *I. JUNCEA* VAR. *NUMIDICA*. Garden, December 10.

LIATRIS ODORATISSIMA, Carolina Vanilla plant, herbaceous perennial Composite, with loose panicles of purplish flower-heads. *Meehans' Monthly*, December.

PEAR BEURRE PICQUET, a Pear with the flavour of the Napoleon. Season, September. *Bulletin d'Arboriculture*, &c., December.

ROSE, BERTHE GEMEN, H.P., white, sent out by Gemen & Bourg, of Luxembourg; it is a seedling from Marchioness of Dufferin. *Le Moniteur d'Horticulture*, December 10.

EDITORIAL NOTICES.

CHRISTMAS CLOSING.—We would remind our readers that our offices will be closed from 1 P.M. on Saturday, December 24, till 9.30 A.M., Wednesday, 27th. Communications through the post will be received as usual.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

THURSDAY, DEC. 29 { Continental Plants, Carnations,
Hardy Climbers, Roses, Dutch
Bulbs, &c., at Protheroe &
Morris' Rooms.

FRIDAY, DEC. 30 { Imported and Established Orchids,
at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—37.6°.

ACTUAL TEMPERATURES:—

LONDON.—December 21 (6 P.M.): Max., 43°; Min., 36°.

PROVINCES.—December 21 (6 P.M.): Max., 47°, Isle of Man; Min., 36°, Cromer.

The History of the Potato, &c. How our unfortunate forefathers got on without Potatoes it now passes the wit of man to conceive. They had Onions, flavoursome bulbs, no doubt, but in no way taking the place of the "noble tuber" as an article of food. When, at length, the Potato was introduced, it was a long time before it was adopted generally. In this matter it formed no exception to the general rule. So strong is the prejudice against innovations in articles of diet that those who make the attempt to introduce something new, no matter how good it may be, have to encounter the most discouraging apathy, if not actual resistance. Still, if an article is really good, and can be grown without undue trouble or expense, it will sooner or later, later rather than sooner, be adopted. It was so with the Potato, and with Rhubarb. Within our own time, the use of the Tomato has increased a thousand-fold. An article in another column will give some notion of the enormous quantities that come from the Channel Islands; the Canaries furnish vast supplies, whilst our market gardens near the large towns grow them by the ton. And yet a quarter of a century has not elapsed since a raw Tomato was considered nasty, and those who introduced the practice of eating them uncooked were looked upon as guilty of affectation.

The use of the so-called Chinese Artichoke, *Stachys tuberifera*, the cultivation of which was introduced from France, is slowly spreading among us, and we may hope that the culture of so excellent and productive a vegetable, and one so easily cultivated, may speedily be developed on a large scale. At present it is only used in soups, or boiled and served with white sauce; but a French cook would find a score of ways of dealing with it, and for our own parts, we find it in the uncooked state preferable to Radishes, in being less coarse. In this taste, however, we have at present but few sympathisers—at least, so far as we know.

Another vegetable-tuber that it was once thought might be used to supplement, if not to supplant, the Potato, is the Oca, or tubers of *Oxalis crenata* (fig. 137). Forty years ago this was introduced by the Royal Horticultural Society, and commented on in our columns.

At rare intervals since that period we have seen and tasted these tubers, which were once more brought under the notice of the horticultural community by Mr. HERRIN at the last meeting of the Royal Horticultural Society. Mr. HERRIN grows them without any special culture in the open quarters of the kitchen garden; so that if, hitherto, they have failed to find favour, it is not by reason of any difficulty in their cultivation.

The Potato has secured such a hold upon us, that none of the plants—yams, oca, Apios, or others—proposed as substitutes has any real chance of success till the land gets Potato-sick, or till the crowding together into one area of Potatoes, and nothing but Potatoes, fosters the development of contagious disease from fungus-spores, or destruction by eel-worms, wire-worms, or any other predatory members of the animal kingdom.

This being so, any literature concerned with the Potato is sure of attentive consideration,

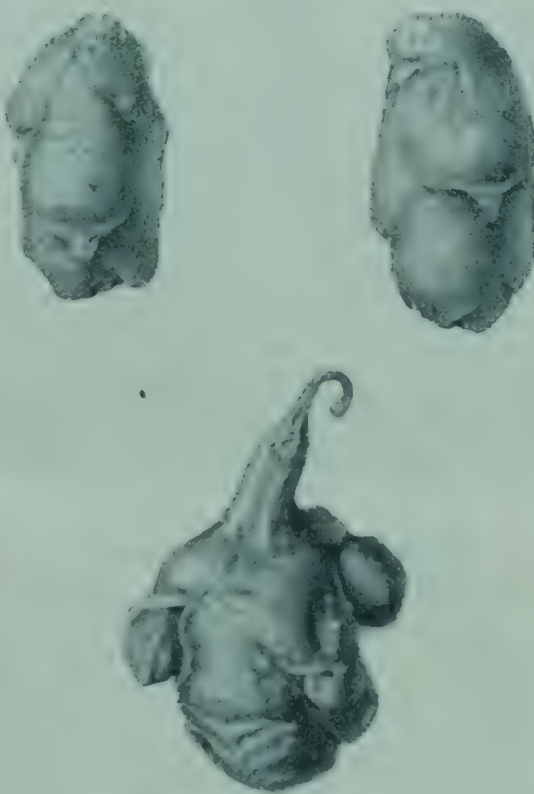


FIG. 137.—*OXALIS CRENATA* TUBERS.

and will be perused by the gardener almost with as much avidity as in the case of the Vine. For this reason we are glad to bring under the notice of our readers a standard work in the French language by M. ERNEST ROZE.*

It forms a large octavo volume of four hundred and fifty-six pages, with table of contents, index, and one hundred and fifty-eight illustrative woodcuts, and one coloured plate. The book is well arranged in two parts, and seven chapters, and is easy to consult. The first part is devoted to the wild Potatoes, their introduction into Europe, and especially into France. In the second part the life-history of the plant is dealt with, and the diseases to which it is subject are enumerated. Details relating to cultivation follow, whilst the last chapter is devoted to the various uses to which the Potato is put as an esculent, or as yielding spirit or dextrose.

In the forefront of the work is placed a coloured reproduction of the Potato, with

* *Histoire de la Pomme de Terre, traitée aux points de vue Historique, Bibliographique, Pathologique, Cultural et Utilitaire.* Par ERNEST ROZE. . . . (Paris: J. ROTHECHILD.)

foliage, flowers, and two tubers, which now-a-days we should call small and mis-shapen. This drawing is the earliest document we possess relating to the introduction of the Potato. It was executed in 1589 by or for PHILIPPE DE SIVRY, who in the previous year had sent two tubers and a fruit from Vienna to CLUSIUS (CHARLES DE L'ESCLUSE). The original drawing if still preserved in the Musée Plantin at Antwerp. JOHN GERARDE (1596) was the first to cultivate the plant in England, and the frontispiece to his *Herbal* (1597) shows the botanist with a flowering spray of the Potato in his hand. It was from DRAKE that GERARDE received the tubers, which were cultivated at that time in Virginia. GERARDE, in his turn, communicated the tubers to CLUSIUS.

M. ROZE goes into detail respecting the early history of the tuber, and the countries from which it originated—details into which we need not follow him, as the subject was pretty fully dealt with in our columns at the time of the most instructive Potato Conference held at the Aquarium in 1886, and on the occasion of Mr. ARTHUR SUTTON's lecture, November 2, 1895, at the Royal Horticultural Society, as well as in the writings of Mr. J. G. BAKER, M. ED. ANDRÉ, M. ALPHONSE DE CANDOLLE, and others. Nevertheless, the details given by M. ROZE relating to the connection which CLUSIUS of Arras had with the introduction and dispersion of the Potato, are full of interest for those concerned in historical research. The general result is, that the native country of the Potato is pronounced to be Chile, and that as to the identification of particular species of tuber-bearing *Solanums*, there is the usual difference of opinion among botanists—a difference which the variation in the plants themselves amply justifies.

The dissemination of the Potato throughout France and the continent of Europe is largely treated by M. ROZE, but has naturally less interest for us than the corresponding details relating to its introduction into this country in the days of the Virgin Queen, when SHAKSPEARE was producing his immortal dramas.

How vast have been the changes in the Potato since that time is shown by the catalogue of MM. VILMORIN, in which six hundred and thirty varieties are enumerated. Our growers have lately naturally turned their attention towards the production of varieties with greater power of resistance to the onslaught of disease. To effect this, selection has been made of early varieties to ripen before the usual period when the disease may be expected, and efforts have been made by cross-breeding to secure greater robustness of constitution.

In dealing with the diseases of the Potato, M. ROZE lays great stress on the occurrence of a slime-fungus (*Pseudoommiss vitis*). In the disease known as curl, M. ROZE could find neither fungus-spawn nor bacteria, nor micrococci. What he did find was the existence of reddish-brown patches, similar to what had been observed in Beet, and which also occur in the Vine, being the cause of that once mysterious disease, "browning," which attracted so much attention at Chiswick and in the vineries of Mr. BLACKMORE. These patches are caused by the presence of a parasite which exists either in the form of a slimy or mucous "plasmodium," not enclosed in any cell-wall, and which feeds on the tissues of the leaf, or in that of large cells or cysts, as when the plant enters into a state of comparative inaction.

SUPPLEMENT TO "THE GARDENERS' CHRONICLE," DECEMBER 24, 1898.



HYDRANGEA HORTENSIS IN THE AZORES.

This parasite is by no means peculiar to the Potato or the Vine, but has already been recognised in some seventy or eighty other plants. M. ROZE has succeeded in cultivating the Pseudo-commis, and entertains no doubt that it is the cause of the disease in Potatoes known as curl. It should be stated, however, that some vegetable pathologists have not hitherto been able to agree with M. ROZE's conclusions.

The disease called scab is attributed by M. ROZE to a micrococcus, whilst dry gangrene is said by him to be due to a fungus, *Fusicyrtium solani*, and wet gangrene to the presence of a bacillus or micrococcus. The Potato disease proper, due to a fungus, *Phytophthora infestans*, is, of course, treated at considerable length, and credit is given to CHARLES MORREN for his discovery, in 1845, of the source of the mischief. It is curious to find that MORREN recommended an admixture of lime and copper-sulphate to be applied to the surface of the soil for the purpose of killing the fungus-spores, thus anticipating the now famous Bordeaux Mixture. We cannot follow M. ROZE in the ample historical details that he gives, nor discuss the share that particular botanists have had in the elucidation of the history of the parasite from MONTAGNE and BERKELEY to DE BARY. Those who desire to gain in small compass an account of the nature and development of the fungus, and of the controversies to which it gave rise, may be counselled to peruse M. ROZE's impartial summary. The sixth chapter is devoted to the cultivation of the Potato, including the subjects of hybridisation and grafting, and is marked by the same thoroughness that characterises the other chapters.

The space at our disposal forbids us from mentioning at further length the contents of this very valuable treatise. It is full of information, clearly arranged, and due credit is given to the various naturalists, of whose observations the author has availed himself. Considering the voluminous nature of the literature on the subject, we can but congratulate M. ROZE on the skill he has exercised in seizing what is essential, and in leaving aside that which is now seen to be unimportant or incorrect. Misprints are rare. HENSLEY should, however, be HEMSLEY; and CRUKSHANKS should be substituted for CRUCKSHANDS.

*** * OUR ALMANAC.**—According to our usual practice we shall shortly issue a *Gardeners' Chronicle Almanac* for the Year 1899. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for the coming year.

HYDRANGEAS IN THE AZORES.—In our issue for Nov. 5 last, we reproduced a photograph, kindly furnished us by Dr. MORRIS, which gave an extensive view of some of the magnificent hedges of *Hydrangea Hortensia* that grow in the Azores. The Supplementary Illustration to our present issue will give a better idea of the wonderful height to which the plant grows, and illustrate the free-flowering habit the species appears to possess in any country. The photograph was taken towards the end of July by a member of the family DABNEY, which has represented the United States as consul for the Azores for three generations. The district where these particular hedges may be seen is the high pasture land of Fayal. As the *Hydrangea* was introduced to the Azores only some thirty years ago, the effect it has had upon the landscape, as shown by the photographs, is certainly remarkable.

"THE GARDENERS' MAGAZINE."—The Christmas number contains an almanac with a coloured

border of Penzance Briars, and a series of seasonable articles, which are fresh and bright, though dealing with worn subjects. We tender our congratulations to our contemporary.

MEETING OF BELGIAN HORTICULTURISTS AT GHENT.—At the meeting on Dec. 5 of the *Chambre Syndicale des Horticulteurs Belges*, the following awards were made:—Certificates of Merit for *Dieffenbachia Leonia*, for *Maranta major*, and for *Peperomia metallica* to M. Rigouts; for *Odontoglossum crispum* var. *Paulina*, to M. G. Vincke-Dujardin (*à l'unanimité*); for *Cattleya St. Legeriana* (*C. intermedia* × *C. Walkeriana*), to M. Vincke-Dujardin; for *Cattleya labiata* Madame G. Vincke (*par acclamation et avec félicitations du jury*); also for *Azalea Madame V. Vermeersch*, to MM. Vermeersch & De Baerdemaeker; for *Anthurium Andreanum* (hybrid), to M. C. Petrick; for *Poinsettia pulcherrima variegata*, to M. L. De Smet-Duvivier; and for *Lomaria* (*L. gibba* × *Blechnum brasiliense*), (*à l'unanimité*), to the same exhibitor. Cultural Certificates were awarded to M. A. Rigouts, for *Croton Madame De Smet-Duvivier*, for *Anæctochilus petola*, and for *Croton George Lesueur*. Honourable Mention was allotted to MM. Vermeersch & De Baerdemaeker, for seedling *Dracæna*; and Honourable Mention for Cultivation to M. Alloncius, for a collection of *Cocos Weddelliana*. The jury expressed the hope of seeing, at a later meeting, *Oreopanax Sanderianum*, shown by M. A. Rigouts, and *Kentia Dumoniana* from MM. E. Praet et Cie.

CARROTS IN INDIA.—We are sorry to learn that the efforts made at the time of the recent famine to cultivate Carrots on a large scale in India have not proved successful. We recorded at the time the success achieved by Messrs. CARTER & Co. in the prompt collection and despatch of an enormous quantity of the seed; but the results were unsatisfactory. It was not sown till 2½ months after the usual time for sowing, and the cultivation of imported seed, says *Indian Gardening*, is more suitable for the minute skill of the market-gardening classes than for the broader style of work displayed by the ordinary cultivator.

COS LETTUCES.—It is not generally known that *laitues romaines*, or Cos Lettuces, were introduced into France by RABELAIS. We do not find any statement of the kind in VILMORIN'S *Plantes Potagères*, but it is made by M. GIBAUT in a paper in a recent number of the *Journal de la Société Nationale d'Horticulture*.

THE LATE DR. PATERSON'S LIBRARY.—On the 14th inst., the Medals, &c., and the library of the late Dr. PATERSON, Bridge of Allan, were disposed of in DOWELL'S Sale Rooms, Edinburgh. These formed the last portion of the effects belonging to the estate of the late Doctor, the antique furniture, curios, &c., having been sold at previous sales, at which the largest prices were realised for ancient firelocks, which ranged in prices from about £20 to £80. The books on gardening were fewer in number than one would have expected, and of these not a few were presentation copies. The *Orchid Album*, vols. i. to v., brought the largest price of any, a dealer purchasing it for £9. Sharpe's *Monograph of the Alcedinidae* was £5; Bauer's *Genera Filicum*, 25s., and other works under £1. The curious old Atlas the Doctor was so fond of exhibiting to the numerous visitors who went to see the famous Orchids at Fernfield, was sold for £3 10s. The oldest work on gardening in the collection was the second (1721) edition of Reid's *Scots Gardner*.

MESSRS. HURST AND SON'S ANNUAL DINNER.—The annual dinner of Messrs. Hurst's employees took place at the Holborn Restaurant on the 17th instant, the spacious Venetian Hall being filled by the numerous company, including several visitors, among them Messrs. T. McKenzie, a member of the House of Representatives of New Zealand, W. G. Innes, G. Townsend, and others. Mr. N. SHERWOOD, V.M.H., presided, supported by his sons, Messrs. W. and E. SHERWOOD, and with few exceptions the

whole of the staff were present. The cordiality existing between the employer and employed was manifested in an unmistakable manner during the evening, especially when Mr. Sherwood in sympathetic terms proposed the health of the representatives, heads of departments, and general staff; but the enthusiasm was greatest when Mr. Hugh Aiton, one of the principal representatives, proposed the health of Messrs. W. & E. Sherwood. After the loyal toasts had been given, Mr. Mackenzie proposed "Success to the firm of Hurst & Son, and said that though there had been a falling off in the export trade of this country, this could not be said of the seed trade, and especially of the firm under whose invitation they had met that evening. He thought success had resulted largely from the personality of the firm, and the able staff by whom Mr. Sherwood was supported. Mr. Sherwood met with a perfect ovation. He said that he had learned this fact in business, that success depended upon the confidence reposed in the firm, and without such confidence they could not hope to succeed. He was justified in saying that their export trade in seeds had shown a decided increase. He had such confidence in his employees and their devotion to his interests, that he hoped all, from the highest to the lowest, would remain in his service. Later in the evening, when proposing what he termed the toast of the evening, "The Representatives and Staff," the Chairman warmly thanked all, from the youngest to the oldest, for their assistance in carrying on the work of the establishment. One present that night had been in the employ of the firm for thirty-four years, another for thirty years, and several between twenty and thirty years. He was looking forward with great hopefulness to his two sons, who were now taking part in the business as assistants in the work devolving upon the head of the firm.

TURNFORD HALL NURSERIES WORKMEN'S INSTITUTE.—The annual supper of the members and friends of the Workmen's Institute in connection with the Turnford Hall Nurseries took place on December 17. The proprietor, Mr. TH. ROCHFORD, occupied the chair, and was well supported by a number of honorary members and friends representing many of the business houses with whom the firm have dealings. The large dining-hall was beautifully decorated with Palms, Pandanus, Codæums, Begonias, and Orchids. Some 180 members and friends sat down to a capital repast. A miscellaneous concert followed, and was much enjoyed. At the close of the concert, the health of the proprietor was drank with ringing cheers, and in his reply Mr. ROCHFORD expressed the pleasure he had experienced in presiding on the occasion, and the enjoyment he had in meeting under such favourable circumstances so many of his workmen and friends. The Institute in which the company were assembled had been erected by him for the moral and material welfare of the men employed by him, and he was much gratified in the manner the young men appreciated the advantages placed within their reach. He hoped he might for many years enjoy the pleasure of meeting his friends on such occasions. Mr. G. PAUL replied to the toast of "The Visitors," expressing the pleasure he had in accepting the invitation to be present, and also bore testimony to the many advantages the Institute offered to the young men of the district. The young men themselves constitute the various catering, entertainment, and management committees and there is general satisfaction.

BARON FERDINAND DE ROTHSCHILD.

THE notice of the death of this gentleman will be received with as much regret by the horticultural community as by any other. The Baron's tastes were varied and refined. His garden and its contents afforded him the keenest pleasure, and being a Rothschild, it is needless to say that he was a strong supporter of our charities. "It was not right," he said, at the dinner of the Gardeners' Benevolent in 1897,

"that those who derived gratification from their gardens should forget the gardeners, to whom they owed so much."

The formation of his famous garden at Waddesdon was described in our columns on June 27, 1885, and July 18, 1889. Well-chosen, indeed, is the eminence on which Waddesdon Manor stands, and doubtless for centuries before it was placed there many a wealthy man had cast longing eyes on it for the site of a residence; but the necessity of scarping the crown to form a sufficiently large level surface, and the labour and cost of taking up the materials deterred them. These difficulties had not the slightest weight with the late Baron Ferdinand de Rothschild, whose artistic eye could see in the beauties of the surrounding valleys, and in the adaptability of the hill itself to artistic gardening, a more than equivalent benefit for the cost and labour incurred.

Consequently, the present princely mansion, a fitting casket for the priceless art-treasures contained therein, was built, and on its completion the country was searched for large Oaks which, at great cost, were taken up and planted to form an avenue running from the central hall to the immense white marble fountain on the other side of the plateau. The hill-side was cleverly laid out, its winding walks disclosing separate gardens, each one giving quite a new view of the surrounding country. In quiet nooks cool rockeries were arranged, and in planting trees and shrubs the late Baron always arranged that each of the main subjects should be planted in clumps of sufficient size to show their individual characteristics, and studiously avoided mixed planting, a proceeding which he rightly held gave a garden a monotonous appearance from end to end.

The fine block of plant-houses, with their central rockeries and rock-bordered corridors, contains a fine set of Orchid-houses, for the Baron cultivated the showier rare and handsome Orchids for two principal reasons—first, because he really liked them; and, secondly, because their flowers were of inestimable value in making those gorgeous displays in the mansion when entertaining, as he often did, the highest personages in the land. Cattleyas, Lælias, Odontoglossums, and such-like things, were grown in quantity, and of each kind only the best varieties were purchased. *Miltonia vexillaria* was also a favourite, and with it, on the occasion of a visit from her Majesty the Queen, Mr. Jaques, the gardener at Waddesdon, made, at the Baron's suggestion, what most of the guests present considered the finest and most chaste indoor decoration they had ever seen. In the matter of these decorations as with all things coming under the eye of the Baron, it was required that everything must harmonise, and if anything struck him as being incongruous it had to be removed.

That he loved his garden, and that he acquired rare and handsome plants because he loved them, and not merely because his wealth gave him opportunities for getting things which less fortunate beings could not afford, was evident; and the interest which he took in the plants shown at the Royal Horticultural Society, and at other exhibitions (for he invariably looked in at a flower-show wherever he might be), and the appropriate remarks which he always made about the subjects on view, clearly demonstrated the fact that not only did he like plants, but that he had acquired a considerable knowledge of them—a trait which is characteristic of all the Rothschilds.

ROUND THE MARKET.

COVENT Garden, with its modern extensions, where at this season all the various home-grown and exotic fruits and vegetables can be obtained, is now, as always, worthy of an inspection by the visitor to the metropolis. In no other market in the world are such immense masses of produce dealt with, and considering its rather restricted area, and congested street traffic, with so little confusion and delay. The early morning is the best part of the day, that is, in winter, from 4 A.M. till 6 A.M., to visit the market, so as to form an idea of the magnitude of the business done. Excellent Asparagus has been obtainable in

the market at any time these last six weeks, and delectable Seakale is fairly abundant and cheap. Saladings from France now take the lead, that of English growth being nowhere in comparison, either in quantity or quality. Those consumers of roast beef who like the warm pungent aroma of English Horseradish, must insist on getting it, there being much continental stuff on sale, which is sadly deficient in this respect, although of good usable size. Celeriac is the continental substitute for blanched Celery, which is fairly abundant just now. The buyer should be careful to eschew the tempting very big tubers, these being mostly hollow, and consequently wasteful in preparation for the table. Mushrooms are good and plentiful, and greenstuff of all kinds abundant and well flavoured, considering the drought the plants endured in September and October, which is not conducive to mildness of flavour. Cauliflowers and Early Broccoli were never finer at so late a date.

The flower market is very pleasing, and it is one of the sights of London, but few visitors see its beauties, owing to the market authorities closing it at 9 A.M. This market is at all seasons well supplied with flowers, and plants in great variety, some being very choice, so that a visit paid between five and six o'clock in the morning would astonish anyone unacquainted with the great proportions of this trade.

In the market proper can be seen on sale all the varieties of seasonable fruits, of fine production, many from far distant countries, including the bright coloured fruits of the Persimmon, or Kaki, a native of Japan, and now grown in the south of France. In form, a Persimmon fruit is like a good-sized smooth Tomato, but more spherical, with just a tiny point at the top. It has a thin skin, and is all pulp, and when thoroughly ripe or bletted, has an agreeable fruity flavour. Whether it will come in large quantities and become popular time alone will show. Lychees from China, a small brown nut-like fruit; Custard-Apple from Madeira; from the Canary Islands, Chow Chows, Yams, Mangos, Oranges, Tomatos, Bananas, and new Potatoes. Of Grapes, first there are those of home-growth, well to the front, consisting of Black Alicante, Grös Colman, and Muscat of Alexandria, some of the black Grapes having fine large berries. There are also Belgian and Channel Islands black Grapes, and that well-known good old kind, the Almeira, from Spain and Portugal. St. Michael Pine-apples are fine in appearance, and weigh from 4 to 6 lb. California sends us fine Apples, such as New Town Pippins, Baldwins, Blenheim Orange, &c. These American Apples are wrapped separately in paper, and packed in layers in boxes holding about 40 lb. Of Pears, there are Easter Beurré, Glout Morceau, Magnifique, and Barrys, which are likewise wrapped separately in paper, and packed in layers, some in one layer only. The Californians also send us Oranges, of which they have several varieties, such as Jaffa, Jamaica, Lisbon, St. Michael, Teneriffe, Tangerines, &c. From Canada there are at the present date Apples, Baldwins, Ben Davis, Greenings, &c.; and from Nova Scotia, King of Tomkins County, a showy-looking fruit; Ribston Pippins, Greenings, &c. These Apples are, without exception, packed in barrels holding three bushels. Nuts are in great variety, with Dates, dried Figs, and other fruits, and all the vegetables forced and otherwise in season.

Holly and Mistletoe, both well berried, with Christmas trees and other plants for decoration, are in great plenty.

CHRYSANTHEMUMS.

THE SEASON'S NOVELTIES.—Continuing my notes on the new Japanese varieties, commenced on p. 425, I find that the novelties in this section are more numerous than for some years.

Haawell Glory is one of Mr. Seward's English-raised seedlings, and belongs to the Japanese incurved section. It has pointed petals, and the flower is full and deep. The colours, chestnut and gold, are pleasing.

R. Hooper Pearson has been properly described as

a yellow-flowered Mutual Friend. It closely resembles that variety in everything but colour, which, in the novelty, is rich orange-yellow. As a market variety, this Japanese should be useful, as it blooms so freely. I regard this as one of the best of the year, and a credit to the raiser, Mr. H. J. Jones.

L. Humphrey is another of Mr. Jones' seedlings. The petals are of medium width, and the colour is pale red or terra-cotta.

Dr. Hope is a warm brick-red colour, with gold reverse. The florets are a trifle too erect and stiff to be graceful. It, however, promises to make a full, solid bloom.

Fair Maid is lilac-rose, with silvery reverse, which is plainly seen, as the centre petals incurve at the tips—a promising variety.

Lord Aldenham is a golden sport from Edwin Molyneux, naturally retaining the character of that popular variety. Whether it is good enough to maintain a leading position among yellows, which are so numerous, remains to be seen.

Fred Joy, one of Seward's seedlings, has rather stiff, broad petals. The colour is warm terra-cotta, with golden reverse.

Mrs. Seward is much like M. Chenon de Leché in form of flower and petal. The colour is rich red or crimson, with golden-chestnut reverse.

James Dare and Helen Seward are both from the same raiser (Seward); the former is magenta-claret, with stiff petals, and the latter red suffused with purple.

M. Fatzer is one of the most promising in M. Calvat's latest batch; the loosely incurving blooms measure fully 8 inches in diameter. The colour is rich yellow.

Mr. T. Carrington promises to become one of the best of the incurved Japanese section. The blooms are large, shapely, and devoid of coarseness. The inside of the florets are purple, the reverse silver, but of a darker shade than Australia, which it somewhat resembles. It is a distinct advance on that variety (Mr. W. Wells).

Nina Dabbs has full, broad, lance-shaped, yellow-coloured florets, which curl slightly at the tip.

Secrétaire Fierens has long drooping florets, bronze-red.

Swanley Giant produces large, closely-incurving blooms, lilac, pink, and white (Messrs. Cannell & Sons).

Master Jas. Epps has long drooping curly florets of deep yellow colour.

Surpassé Amiral is a large heavily-built bloom, just a trifle rough in the petal. The colour of centre is golden yellow, paler at the base, and occasionally flushed with red.

C. F. Payne is a good yellow-flowered variety, with broad florets.

Madame G. Bruant is a full-centred Japanese, with long flat florets, which curl slightly at the tips, until finely expanded. The colour is clear rose.

Souvenir de Madame F. Rosette is reddish-purple on the surface, with silver reverse.

Madeline Davis is one of Mr. Davis's seedlings, and is full of promise. The colour is white, lightly tinged pink. The florets are irregularly twisted. A full, deep variety.

Madame A. Rosseau is white, blotched with purple or lilac, full and large.

Mr. F. Brewer has petals of the style of Ella Curtis, pale yellow.

Le Grand Dragon, orange-yellow colour, with somewhat short petals.

Belle Mauve, a lovely tint of mauve, with incurving florets.

The following varieties have been raised by Mr. Weekes, Thrumpton Hall Gardens, Derby, and are distinctly creditable examples of English-raised Chrysanthemums:—

Mrs. Barkley has broad petals which curl at the tips; the colour is rose, with silver reverse.

Lady Crawshaw bears a close resemblance in the form of flower to Madame Carnot, but the florets are perhaps a trifle less in length. The colour is white, flushed faintly with blush. This variety should be noted by intending growers for exhibition.

W. Cursham belongs to the semi-incurving Japanese section with curled tips; the florets are narrow, bright, terra-cotta rose in colour, with gold reverse.

Annie Prevost resembles Etoile de Lyon in style of floret. It is rose-magenta in colour, tipped with silver.

Mrs. Coombes is one of Mr. N. Davis' seedling-raised varieties, with narrow, flat petals, the palest of lilac colour. *E. Molyneux*.

excellent decorative subjects; and next to them come the Pômpons. In both cases the blooms last for a long period in a fresh condition when removed from the plants.

In lifting the roots the stems should be cut off within 6 inches of the ground, and the roots dug up on a day when the soil is not unduly moist. Let the roots be placed in a cold vinery or a shed for a few days, and when dry let them be stored in a cool shed, cellar, or even under the stage of the greenhouse,

ment and loss of foliage. The first signs of aphid, black or green, should incite the gardener to take measures against these foes, either fumigating with tobacco, or vaporising with "XL all," never waiting till the plants are badly infested before acting. Fumigation on two successive nights will kill the aphides better than aught else. On the morning following a fumigation, the plants should be carefully syringed, in order to clear off the dead and sick insects and dust.

The Celery-leaf miner-fly (*Tephritis onopordinis*) is at times very destructive, disfiguring the leaves, and giving a check to the plants. The larvæ of this species of fly can easily be seen between the two skins of the leaf, and may be readily killed by nipping it, or in bad cases by the removal of the leaf.

The plants should now be standing in a house where they will be safe from injury by frost. A low span-roofed house, or a pit capable of being heated when necessary, suits them. The three chief points in winter-culture are freedom from frost, abundance of air, and a position close to the glass, so that growth will not become drawn, and fire-heat only made use of when absolutely necessary. In warm southerly localities the Cineraria is wintered in cold pits, and the little frost experienced is warded off by means of coverings. A cool, moist floor, upon which to place the pots is of importance. Those plants which have filled their pots with roots may be afforded weak manure-water occasionally, and plants in small pots for flowering at Christmas may be afforded half-a-tea-spoonful of sulphate of ammonia to each 6-inch pot, sprinkling it on the surface just before water is applied. Care must be taken when giving this stimulant that the soil is not dry, or injury to the surface-roots may be done. A safe method of applying sulphate of ammonia is to dissolve 2 oz. of it in 3 gallons of weak liquid-manure, and afford this alternately with clear water. Where cow's or sheep-dung can be obtained, nothing is better than this, and soot, mixed with water and applied in a clear state alternately with clear water. Plants intended to flower in March and April should be repotted, using a light, fibrous, loamy, rough (unsifted) compost, not made over-rich with manure. Except such plants as are growing in relatively small pots, Cinerarias do not require much water at the root at this season. Large specimens required for spring-flowering, if inclined to grow tall, and ill-furnished at the base, should have the point of the stem pinched out as a corrective. *E. M.*

A STORM-TOSSED VETERAN.

It may evoke some pleasant reminiscences at this season to lay before our readers a portrait of a *Pinus Cembra* (fig. 138) which has made a brave if futile effort to withstand the wintry blasts, the lightning flash, and the scores of other hostile contingencies which the trees on the slopes of the Alps have to contend against. The Matterhorn in the background forms a contrast striking but hardly real, for this great pyramid, which might be taken as an emblem of stability, is subject to the same fate, and the time will come when its rocky precipices will also present a picture of destruction and disintegration. The plasm of the tree and the rock of the mountain are both subject to continual change; and although we cannot conceive of their utter annihilation, yet the form they will ultimately assume must be something very different from what it now is. An account of the growth of *Pinus Cembra* in the forests of Zermatt was given in our columns, p. 236, September 24, 1898.

SCOTLAND.

FLOWERS IN SEASON.

FLOWERS are becoming year by year a more pressing requirement during Christmastide in Scotland; this is very largely because that festival is now more frequently observed than formerly. Churches and private chapels call for a large supply, and it is fortunate that we have Chrysanthemums to help in meeting these. White flowers are to be desired before all others



FIG. 138.—A STORM-TOSSED VETERAN.

FLORISTS' FLOWERS.

DAHLIAS.

In consequence of the mild weather experienced up to November 22, when several degrees of frost occurred in the south, and at Loughborough in Leicestershire, 12° were registered on the grass, Dahlias of all sections continued to bloom up to that time. Nothing would be gained, however, by allowing the roots to stay longer in the ground.

Dahlias of all types are now so numerous in variety, that none but the best should be grown, and the present is a good time to discard inferior varieties. The Cactus varieties are finding much favour, being

where water will not reach them. The chief points to be aimed at are freedom from injury by frost, and coolness without excessive dryness. The latter condition is best insured by covering them with sand, half-decayed leaves, or finely-sifted coal-ashes. As the spring comes round, and the roots exhibit signs of growth, a sharp look-out must be kept for the ravages of slugs and snails, which devour and gnaw the succulent growths.

CINERARIAS.

These will now require a good deal of the gardener's attention, or the heads of flowers will be poor. Green-fly is very troublesome, and particularly in mild weather, infesting the leaves, and causing disfigure-

but, fortunately, they are not indispensable; and for dimly-lighted edifices bright yellow flowers show better than any others. Mons. Pankoucke, Edith Tabor, Modestum, Noces d'Or, and Libby Allen, are among the best Christmas yellows we have. Niveum, Miss Margaret, Western King, and Souvenir de Petite Amie, are very good in whites. Of coloured varieties, in fine condition at this season, there may be mentioned Etoile de Lyon, J. B. Dibden, Silver King, and Souvenir de Madame Buller, the last-named a very fine and floriferous variety, of a dull crimson shade of colour.

A friend has written me recommending Mrs. Field as a late-flowering Mary Anderson, but for large churches, nothing at this season surpasses Chrysanthemums. I have used them repeatedly as pot-plants to embower the pulpit in an edifice it is my duty annually to decorate for Christmas. Large blooms are incomparably superior in their effect to small ones; and, as a rule, perhaps always, it is preferable to mass colours than to break them up in mixtures. For a small private chapel where only the finest flowers are admitted, Chrysanthemum niveum and S. de Petite Amie are the two best varieties, Arum Lilies, Roman Hyacinths, rose and white Van Tholl Tulips, and Calanthes with Palms, variegated Pandanus, Maiden-hair Ferns, &c., are the plants generally employed. For vase furnishing either Arum Lilies, Eucharis, or Chrysanthemums are used. Candle-brackets are lightly entwined with sprays of Ivy, with Holly intermixed. I know that there is a sentiment against Ivy. But as a matter of fact, previous to the Reformation, Holly and Ivy were the two sole members of the vegetable kingdom that furnished material for Christmas decoration in churches. In large buildings long sprays of Ivy can be used more effectively than any other material. Holly, when well-berried, is, of course, indispensable. I also use Box, which, however, is a plant that has been at no time in any great repute for the purpose. Rushes, not to strew on the floor, as in bygone days, but to use with Broom, Pampas-grass, browned Bracken-ponds, and any other suitable hardy material is of much value when used with discretion. Smilax is of the utmost value for screens of fine workmanship; but I think that on all permanent decorative work, only the slightest possible amount of material should be employed. It is the highest art in all kinds of floral decorations to know just when the correct quantity and quality has been reached, and there to stop. In nothing is this more apparent than in the floral decoration of churches.

With regard to house decorating, there is generally a stereotyped method which is repeated year after year in the same houses, and it is well not to attempt alterations where such is the case. Holly is, of course, the pre-eminant material, but the dark green leaves may be much lightened by the employment of the best variegated forms, such as Silver Queen and Golden Queen. For pictures, mirrors, and staircases the shoots are best when strung in single thickness on a string, but Ivy with small foliage is much better than Holly for these purposes.

For dressing the Christmas dinner-table, though we have not so far north the true Christmas Rose in flower till early in the year, yet *Helleborus latifolius* variety is a good substitute. Generally there is also a few blooms of the true *H. angustifolius*, which is very like *H. niger*. We have also *H. odoratus*, greenish-yellow, and this year *H. atropurpureus* has been flowering throughout the whole of the present month. A very pretty arrangement is consequently admissible with these flowers alone. But we have also Ivy in flower, and these are employed along with a very few sprays of the finest-berried Holly. Rosemary came into use about 1620, and sprays of this are used. B.

PROGRESS IN THE TOWN OF LEICESTER.

It is doubtful if there is any town in the United Kingdom which has progressed so rapidly [in some particulars. Ed.] as Leicester has done in the last

twenty years. Till then the principal streets were narrow, crooked, and badly paved, and without modern buildings of any pretensions, and much of the surrounding land was an unhealthy, swampy waste.

But in a comparatively few years this ancient borough has been revolutionised, not merely by being brought up to date as regards ordinary requirements, such as municipal buildings, post-office, hospitals, hotels, and one most convenient railway-station; but many of the streets have been widened, and properly planted with suitable trees.

The latest scheme is to bring an abundant supply of pure water from the hills of Derbyshire. Notwithstanding the great outlay incurred in improving the town in recent years, the health and the amusement of the inhabitants have received the greatest consideration. Convenient recreation-grounds have been laid out in various parts of the town; beautiful parks and pleasure-gardens have been planted with the most suitable trees and shrubs in great variety; special mention may be made of the fine collection of Hollies in Abbey Park, which are in luxurious health, in the midst of a busy part of this smoky town. There are other parks as extensive in the course of being laid out, and several miles of avenue are being carefully planted with trees. The entire management of the town-parks, gardens, and recreation grounds is entrusted to Mr. Burns. The unique method of bedding-out, and the attractive sub-tropical plants, have already been described in these pages, but it may not be amiss to mention the fine Bamboos and Mufas that were seemingly uninjured by the frosts and gales experienced at Leicester towards the end of November.

Notwithstanding the many demands on Mr. Burns personal attention, his energy and his determination to keep pace with the times, and make the places under his charge attractive the whole year, cause large quantities of plants to be cultivated. And of these Chrysanthemum plants fill three large span-houses. The flowers were in grand form at the end of last month, and might have been seen in a variety of forms, pyramids and standards bearing three or four flowers, big bushes unthinned of blooms, down to modest spring-struck plants growing in 5-inch pots bearing one fine flower. The varieties included the most modern of Japanese, and other sections.

The flowers on these plants were in many instances quite up to exhibition form, while the Pompon and single varieties were kept dwarf for placing near the walks. As showing how popular gardening is, and especially the cultivation of the Chrysanthemum, among the Leicesterians, it may be mentioned that the number of visitors on one Sunday numbered 12,000. J. H. Goodacre, Elvaston.

A MONSTROUS CARROT.

MALFORMED roots of all kinds are common enough among gardens, the aberrations from the normal shape being sometimes most grotesque. Thus we have Potatoes resembling the human hand, Beetroots forked like the human biped, and furnished with arms, and sometimes a caudal appendage. These monstrosities in roots are commonly due to the young root having met with hard, impervious impediments to its downward course, in consequence of which it has deviated in several directions, perhaps enclosing the impeding objects within its tissues. At other times, as in the case of several separate entities springing from one seed, as occurs sometimes in the seeds of Mangold Wurzel and Beet, there may be coalescence from the time of germination, the several individuals continuing united through life. The root shown in our fig. 139, was grown at Batheaston by Mr. Lennox, and exhibited at the Widcombe Horticultural Show this year. It was a transplanted Carrot, used in filling up a gap in a row.

HOME CORRESPONDENCE.

EXHIBITION COXCUMBS.—In a report of a flower show at Sandy, mention was made of some fine Coxcombs exhibited by Mr. T. Lockie, The Gardens,

Diddington Hall, Huntingdon, and an approximate estimate was hazarded as to their dimensions, but it fell short of their actual size, as they were subsequently measured, and it was found that the length of comb was 26 inches, and the breadth 16 inches; the four specimens were counterparts of each other, so finely and evenly had they been grown. Mr. Lockie states that the seeds which produced these remarkable plants had been saved from a very fine strain, and were sown at the end of February, and raised and grown on in a temperature of 70°, having the advantage of a mild bottom-heat. Mr. Lockie finds a Melon-frame the best to raise seeds in, and as soon as the plants are large enough to handle and are well-rooted, the best are potted singly and kept near the glass, and shifts are given as soon as the pots become filled with roots, the greatest care being taken not to allow them to become pot-bound, or starved for lack of attention; they are syringed every evening with tepid soft water, which is valuable for keeping away red-spider, which is very prone to attack the young plants. As soon as the combs begin to show themselves, those of a good shape and colour are selected, and transferred to the flowering-pots, usually those from 7 to 8 inches in diameter. When raising seedlings Mr. Lockie uses a very fine compost, but for advanced plants, and especially for those to be grown on as specimens, the compost is made up of good loam, some well-decomposed manure from a Mushroom-bed, leaf-soil, a good sprinkling of coarse sand, and some bone-meal; the drainage of the pots is bones broken to the size of a quarter of an inch. Treated as directed, the magnificent plants Mr. Lockie is accustomed to show are produced, and he has an excellent record as a prize-winner, for he is able to state that, having grown and exhibited Coxcombs in various counties for nearly thirty years, he has been beaten in competition only once. The strain which Mr. Lockie grows is one he has selected and cultivated for many years; in colour the combs were of a rich, glossy, wine-purple. It is the constant attention the plants receive which leads to such satisfactory results. Many who grow Coxcombs sadly neglect them, and it is want of attention which leads to so many failures. Somehow, the new colours in Coxcombs the German and other florists have produced, do not appear to be greatly appreciated in this country. Our growers still stand by either a rich ruby-crimson colour, or else the dark purple-crimson shade Mr. Lockie grows with so much success. Yellow, grey, white, and orange tints are not seen upon the exhibition-table. R. D. [The extra dwarfness of these plants is obtained by cutting off a portion of the tap-root at each successive potting, no strain of Coxcombs being naturally as dwarf as the best-grown plants; the wounded stump is placed in almost close contact with the cracks. Ed.]

CACTUS DAHLIAS.—Now that the season has closed a remarkably fine Dahlia time, the present moment is opportune for inviting attention to these flowers. There still remains in relation to them the old complaint, that the plants do not carry their flowers much above the foliage—an old-time fault with all Dahlias. More or less breeding and selection have in a certain degree corrected this, and it is to be hoped that the fault will be corrected in the case of the Cactus section. It is not enough that this section gives us fine blooms for cutting, we want also good garden decorative plants. Certainly there was no lack of varieties originally termed "Cactus," but now largely expunged by florists from the section that are effective plants in the border, but then they have not the true and much-prized Cactus form. Thus, whilst only the most perfect of flowers will satisfy their admirers, yet with many of these the habit of growth in the plant is not of the best. It has been a pleasing feature of the annual exhibition of the National Dahlia Society that a list of true or admitted Cactus varieties is published in the schedule, and as that of the passing year numbers forty-seven, it is obvious that selection was wide enough, as the classes for them do not, as a rule, call for more than twelve varieties. During the passing year about a dozen new varieties have been granted certificates, thus admitting them to the select list. It is naturally a matter of interest to learn what the executive will do in such a case, whether they will retain the entire list and adding the new ones, or delete from the year's list a certain number of inferior varieties, and by that means keep the Cactus list really select. I think that a selection of fifty varieties is enough for all purposes. Of course, were such a limitation of recognised Cactus varieties made by the society, it would practically compel all trade members of that

body to prune their lists accordingly, as it would be misleading for any member-trader to describe in his catalogue as Cactus varieties that were not recognised as such, and therefore not admissible to the shows of the National Dahlia Society. Florists should be grateful for such limitation of varieties, their lists being too extensive as it is. Still, these lists do not jar against common sense to so great an extent that the published lists of Chrysanthemums do. A. D.

TOXICOPLHŒA SPECTABILIS.—This handsome compact plant is now flowering here. Although somewhat out of its flowering season at present, it is a plant rather seldom seen in our gardens, and one that certainly deserves better respect generally. For its cultivation in pots the soil should be composed of about two parts loam, one part peat, and a good portion of sharp sand. Propagation is effected by layers and cuttings. P. Bolt.

THE OFFICIAL YEAR OF THE ROYAL HORTICULTURAL SOCIETY.—It is a noteworthy circumstance that there are to be two meetings of the Royal Horticultural Society during January. Hitherto there has been but one meeting. But there is to be, for some doubtless good reason, a second meeting in the ensuing month, therefore the year of the existing committee will not expire until the second meeting, which will, I presume, be on January 24. It is interesting that the Royal Horticultural Society should find it needful, in its operations, to extend the number of its meetings in this way; certainly they are not remarkable in mid-winter for extent, but generally they are extremely interesting and pleasing. It may be early to suggest that greater justice would be done to the very public-spirited and enterprising persons who send beautiful exhibits, no matter at what season of the year, to the Drill Hall, were the meetings more widely advertised in the daily papers, but something more should be done in that direction as the spring advances. It is surprising that, with so many thousands of Fellows, a greater number, especially of the new ones, do not attend. But there must be hundreds of flower lovers in London who would gladly pay a shilling to see the Drill Hall shows did they know of them. A. D.

LAPAGERIAS IN THE OPEN AIR.—I was interested in "R. B. L.'s" communication on this subject (p. 423), and if these plants can be well grown in the climate and environment of Dulwich, a new sphere of usefulness, and perhaps profit, may probably be in store for these beautiful plants over very much larger areas of country. While I have met with and heard of Lapagerias in very cool greenhouses, where the plants have been exposed to frost at all times, and in warm parts of the country, I do not remember seeing or hearing of it so near London before in the open air. Neither have I ever seen the white variety of the species in the open air. A general opinion prevails that *L. rosea-alba* is more delicate than the coloured species, and it must be admitted that it is not always so successfully grown; but it is doubtful how far the belief in the greater tenderness of mere white varieties of Lapagerias or other genera or species rests upon any solid basis of scientific fact. [It is merely a sport from *L. rosea*. Ed.] There would probably be found some special objections to the commercial culture of white Lapageria in the open air. The pollutions of the foggy climate of London must needs mar their spotless purity. Your remark, Mr. Editor, that the blooms from outdoors were of a deeper tint of crimson, was interesting. The same thing is noticed in Bougainvilleas, Tacsonias, and Passiflora, and many readers of the *Gardeners' Chronicle* would be glad to know the reason why. D. T. F. [We believe it to be due to the greater intensity of the lights. Ed.]

TIMELY PLANTING OF BULBS.—The Rev. Geo. Engleheart asks (p. 445) why I have "with very satisfactory results, transplanted Snowdrops and Narcissi in June, unless because that is the right season, and October or November the wrong one?" I merely referred to the satisfactory results attending the transplanting of the bulbs before the foliage had died down, by way of reminding your correspondent that success in bulb-culture out-of-doors is not dependent upon the bulbs being planted in September or October. The practice of transplantation in June is to be recommended when the bulbs can be transplanted from one part of the garden or grounds to another without delay; the bulbs will then complete the ripening of the foliage in their new positions. There is no doubt but Mr. Engleheart is quite right in planting out his bulbs as soon as they have ripened off their foliage, if not shortly before. Nevertheless,

the system cannot be carried out in general practice, owing to the fact of growers having to wait the arrival of supplies from the wholesale growers. I have always advocated in the *Gardeners' Chronicle* the early autumn transplantation of fruit trees, &c.; I mean the transplanting of trees from one part of the garden or orchard to another, so as to enable the trees to make fresh roots before they shed their leaves, and have thus been by no means unmindful of the good results attending the "timely planting" of all trees and plants, including, of course, bulbous plants. Mr. Engleheart's experiments in the planting of Narcissus Empress are interesting, the bulbs in this case having been lifted in June three years following. Your correspondent having reminded me "that it is the right practice of market growers which is under discussion," I will ask him, what would have been the result, in point of size, of bulbs A and B had they been left undisturbed in the ground for three years before being lifted? Does he think there would have been any difference in the size of the said bulbs if taken up two years after planting? Or, would there be any noticeable difference in the floriferousness, size and substance of flowers, and date of opening, the second year of flowering? My own opinion on these points is an emphatic No! Your able correspondent (whose contributions to the



FIG. 139.—A MONSTROUS CARROT. (SEE P. 460.)

Gardeners' Chronicle I always read with pleasure, and I hope, profit), will please remember that flower, farmers do not lift their bulbs annually. On the contrary, they leave them in the ground undisturbed for years, to increase in size and numbers annually. Mr. Engleheart says (truly enough) "Daffodil bulbs can be bought to any amount in January," and then asks, "Is January therefore the right time to plant them, or where does Mr. Ward draw the line?" January is certainly not the right time to plant bulbs, but had I taken a fresh house and grounds where there were no Daffodils in December, I certainly should not hesitate to make plantings in January, and I should expect (assuming the bulbs to be well preserved) to obtain as good, if not better, results fourteen or fifteen months later from these January-planted bulbs as from bulbs planted nine or ten months later. I beg to remind Mr. Engleheart that although my original letter was penned about the middle of the second week in October, I did not then say that this was the best time to plant bulbs, but that "the present is a good time to plant most kinds of bulbs." H. W. Ward, Rayleigh, Dec. 17.

THE LUCOMBE OAK.—I see you question the age of the Lucombe Oak here, which is given at 120 years in your special commissioner's report, p. 416. I

believe it is quite correct, as I repeatedly heard Sir T. D. Acland, the tenth baronet, say soon after I came here, that it had been planted eighty years. It is believed to have been planted by Mr. John Veitch, the founder of the present firm of Jas. Veitch & Sons, great grandfather to the present head, Mr. Harry Veitch. John Veitch was the Land Steward here at that time, and commenced as nurseryman on Budlake Farm, which adjoins the gardens here. The estate was very much improved by the planting done under his management, and I have often heard the late baronet speak in the highest terms of his taste and ability as a landscape gardener. Some of our largest Lucombe Oaks are grafted on the Turkey Oak, and throw out shoots below the union. Loudon gives 1735 as the date when the Turkey Oak was introduced into this country. John Garland, Killerton, Exeter.

AMPELOPSIS VEITCHI.—For many years I have been accustomed, when writing about this plant, to style it *A. tricuspidata*; now I see it called *Vitis inconstans*. Which is correct? If it is now a *Vitis*, why so? From information I got at Kew long ago, I had an impression that there was something about the glands of the climbers which separated *Vitis* from *Ampelopsis*. W. T. T. [If you prefer to keep *Ampelopsis* distinct from *Vitis*, then *A. tricuspidata*, Siebold, is the correct name. (See Masters, in *Gardeners' Chronicle*, 1869, p. 833.) If you think *Ampelopsis* not worth keeping separate from *Vitis*, then you must call the plant *Vitis inconstans*, as is done in the *Index Kewensis*. Lastly, if you think it most convenient to retain the provisional garden name, and continue to call it *Ampelopsis Veitchi*, there is nobody to gainsay you—*utrum horum mavis accipe*, Latin Grammar! Ed.]

HARDY HEATHS (p. 432).—Everything written by Mr. Bean is worth reading, and I have read his account of the hardy Heaths with much interest. But I should like to correct one statement he has made, which may deter many from growing the hardy Heaths. He says, "These Heaths will thrive in any good moist soil that is free from calcareous matter." My soil is full of lime and magnesia, but I grow most of those he mentions, and they thrive very well. Henry N. Ellacombe.

OLD BOOKS ON GARDENING.—I have read with much pleasure Mr. Brotherston's admirable account of that wise old writer on gardening, William Lawson. Another writer on the same subject, and of about the same period, or a little later, Ralph Austen, is also well worthy of notice and commendation. His small 4to, *A Treatise of Fruit Trees*, my copy of which (2nd edition) bears date 1657, is known to most collectors of books on gardening. But I have an 8vo volume by this author, *A Dialogue: or, Familiar Discourse and Conference between the Husbandman and Fruit Trees in his Nurseries, Orchards, and Gardens*, Oxford, 1676. I believe this book to be extremely scarce. The late Dr. Hogg, when looking at it in my library told me, that till that moment he had believed there was only one copy in existence, and that was in the Bodleian Library. Here are two brief extracts:—"An Invitation and Encouragement to a Conference with Fruit Trees. *Husbandman*: Come my Friends, let us walk into this pleasant Garden, and have some further Discourse with those innocent harmless companions, the Fruit Trees; they will bid us welcome and are still ready and at leisure to confer with us, and will be sure to teach us one good Lesson or another. But we must not forget what hath been often said concerning the way and manner of their Discourse with Men: That it is not audible to the outward sense of hearing, in the sound of words; but always to the inward sense, the mind, and understanding, and thus they will Discourse with us as long as we please, and they always speak Rationally and Religiously," &c. "*Husbandman*: It is undoubtedly true that cider, in general is the most wholesome drink, in reference both to health and Long life; though made of ordinary and common Fruits. But there are certain peculiar Fruits (now of late time) found out, and known, which makes cider far beyond (and better, than) the common Cider: As the Redstrake, the double Red-redstrake; gannet Moyles; and some other kinds that might be named: and so long as health and long life is in esteeme with men, so long will Cider be in esteeme also; as the chief meanes to attaine these Ends; Learned and judicious Physitians do also concur therein, and commend syrupum de Pomis; vinum Pomaceum; vinum

Britanicum, &c.; See London Dispensatory; composed by a College of Physicians pa; 38: &c." I wonder if any of your correspondents know of any other copy or copies of this book. Wm. Paul, Waltham Cross, Herts.

CHRYSANTHEMUMS IN SCOTLAND.—Mr. Molyneux obviously misinterprets my remarks. They did not refer to exhibition blooms, but to those for home use and for market, and the period embraced was that during which the blooms opened, and not to the whole season. There was undoubtedly a great stride forward evident in the training of those plants shown by Mr. Thomson at Edinburgh, but none in the quality of the individual flowers, which, in my judgment, were generally much inferior to those shown last year. I quite agree as to the high quality of the cut blooms. R. P. Brotherston.

PERSIMMONS.—I am told that these are now sold in the City as Cape-grown. I should like to know whether these Cape-grown fruits have seeds. Mine have none; but I know they produce seeds in the Riviera. Mine have been a great success this year. I have had plenty, many of them 9 in. round in the longest, and 7 in. by the shortest circumference. When thoroughly soft, the flavour is excellent, reminding one of the best Apricot-jam, with a suspicion of Nectarine, with both the flesh and skin of a rich, deep crimson colour. My tree is against a wall, but I have no doubt it would do well as a bush, and even without the fruit it would be worth growing for its handsome foliage. Henry N. Ellacombe. [The fruit we tasted had no seeds. Ed.]

TOMATOS IN COLLECTIONS OF VEGETABLES.—A little diversion is sometimes afforded when judges discuss the points of a collection of vegetables with Tomatos included in some cases and not in others. For my part, I do not approve of Tomatos being shown in a collection of vegetables, and I would like to see all schedules give good prizes for salads, which would include Tomatos, and at the same time state that the Tomato is exempted from collections of vegetables. There can be no doubt that the Tomato should be classed as a salad. I should like to see more prizes offered for salads—an interesting class. A. J. L., Wyfold Court.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

DECEMBER 13.—Present: Dr. M. T. Masters (in the chair); Mr. Veitch, Mr. Michael, Dr. Müller, Mr. Bennett-Poë, Mr. Sutton, Professor Church, Rev. W. Wilks, and Rev. Professor Henslow, Hon. Sec.; Visitor, Mr. Diderich, from Australia.

Prunus lusitanica var. *azorica*.—A spray with fruit of this variety of the Portugal Laurel was shown, having been sent by Miss Breton, Forest End, Sandhurst. Mr. Veitch observed that as a garden variety it had no special merits but rather the reverse, in consequence of its straggling habit.

Narcissus pachybotrys.—With reference to this species, Mr. Diderich remarked that it grows freely in Australia, though it is one rarely cultivated in this country. It is a native of Algeria.

Narcissus viridiflorus.—A flower of this rare species was sent by Mr. Kingswell, of Harrow Weald. It is an autumn-flowering species, rarely cultivated, but introduced from Spain or Barbary in 1629, according to Paxton.

Begonia venosa, Skam.—A new species from Brazil, with a remarkable habit and large leaves, densely tomentose below and furfuraceous, with substellate hairs above. The flowers are small, and of a pinky white tint. A botanical certificate was unanimously awarded to this very interesting species. It was received from Mr. Gilbert Christy, F.L.S. It had been raised from seed procured by Professor Löfgren on an island near Para.

Asparagus Sprengeri.—Introduced from the Cape about four years ago; it was exhibited by Mr. May. Two varieties, raised without crossing, have already appeared—viz., compactus and densissimus. It is an interesting species in that the "needle-like" structures of the garden Asparagus are in this species represented by genuine leaves, revealing the true nature of the former.

Caterpillars.—Some living specimens of three species were received from Miss L. H. Paterson (Edinburgh) and forwarded to Mr. McLachlan, who reports as follows:—"One of the caterpillars (brown) is the larva of one of the 'rove' beetles (Staphylinidae). They are mostly carnivorous, or feed upon decaying vegetable matter, so that they are generally beneficial. The other (a white one) is the larva of *Hepialus sylvinus*, one of the 'Swift moths.' The 'ghost moth' is of the same genus. It is destructive to the roots of anything herbaceous. The third was the larva of one of the Noctua moths, probably *Agrotis segetum*. It is very destructive, and feeds chiefly at night. It has nothing whatever to do

with the cockchafer, which it was thought to resemble. The above are all general feeders. It might be as well to lift the plants where they occur and supply fresh earth, charring the old. Insectivorous birds should be encouraged. A dressing of gas lime, repeated several times, might do good, but it should be used cautiously."

Apple-tree disease.—Mr. Bunyard sent a small branch curiously affected, with the following observations:—"The branch was sent to me by Rev. A. Foster-Melliard, in whose garden the tree grows. When the branch was cut it was in a pappy floccose state; this appearance had suddenly broken out in a tree grafted two years ago. It probably arose from strong unmanured wood being over-fed with stimulants. The tree had made a very gross growth." The specimen was forwarded to Dr. W. G. Smith for further examination.

THE HORTICULTURAL CLUB.

DECEMBER 13.—The usual monthly dinner and conversation took place at the rooms of the Club, Hotel Windsor, Victoria Street, S.W., on the above date, and there was a good attendance of members. Mr. Harry J. Veitch (Vice-Chairman of the Club) presided, and there were present the Rev. W. Wilks, Messrs. Martin R. Smith, Ph. Crowley, Selfe Leonard, James H. Veitch, Gosling, Salmond, Geo. Monro, Peter Kay, J. Tillman, Geo. Bunyard, Shoults, Bassett, and the Secretary.

The discussion was on size in flowers, fruits, and vegetables, and was opened by an interesting and amusing paper by the Rev. W. Wilks, who deprecated the vulgar taste for large things in the strongest terms. He alluded to the absurd size to which Chrysanthemums are grown, and asked, what lady would use them for the purpose of decoration? It was the same with fruits. The huge Gros Colman Grape had almost superseded all other kinds on the market. And so in vegetables; immense Onions were grown, from which nearly all true Onion flavour had been eliminated; and Brussels Sprouts, like young Cabbages, had superseded the small, delicate flavoured ones of former days. He hoped that there were signs of returning common sense and a clearer perception of beauty, and said that probably the worst offenders were provincial societies, with whom size was everything, and the man who could produce the biggest Cucumber, Vegetable-Marrow, or Onion, generally came off victorious.

Mr. MARTIN R. SMITH said that sometimes the size of *Souvenir de Malmaison* Carnations was adduced as a proof of this vulgarity, but the fact was that this race was entirely distinct from the ordinary type of Carnation, of which fact its foliage was a clear proof; its origin was unknown, but of its distinctness there could be no doubt. Mr. Geo. BUNYARD, as a fruit-grower, said the same thing held true with regard to fruits. Big Gooseberries, whose only recommendation was their size, had in many gardens superseded such fine flavoured varieties as Warrington, Ironmonger, White Champagne, Venus, Cheshire Lass, Yellow Golden Ball, and others, which had to give way to huge tasteless things. Mr. GEORGE MONRO stated that probably the British public was responsible for a good deal of this, and while big things sold well, he supposed the growers would cater for it. Many other members took part in the discussion, which was of a very interesting character, and a vote of thanks was cordially given to Mr. Wilks for his address.

ROYAL HORTICULTURAL OF ABERDEEN.

DECEMBER 14.—A special meeting of this society was held on the above date, to reconsider a resolution passed at the annual meeting.

That resolution was moved by Mr. Alex. Grigor, and was to the effect that working men members possessing greenhouses should not be allowed to compete at the shows of the society in the working-class division, but in those known as amateur's classes. From many reasons (one of the principal ones being that the entrance-fees in those classes would be higher), the working-class members much objected to the new rule. Their opposition met with such general support, that after considerable discussion, there voted thirty-five members in favour of rescinding the resolution, and but four against.

NATIONAL CARNATION AND PICOTEE.

DECEMBER 14: Annual Meeting.—There was a large attendance of members of this Society on the above date, and possibly never before were so many persons congregated in the room of the Horticultural Club as on this occasion. MARTIN R. SMITH, Esq., presided, but it appears to be the custom for the committee not to present a report, though somehow or the other one finds its way into the schedule of prizes when it is published.

The Secretary and Treasurer made a cheering financial statement, for the subscriptions had amounted to £249 1s., the Crystal Palace Company gave a donation of £50 to the prize fund, and the special prizes offered by the Chairman brought £10 7s. Prizes were awarded to the amount of £182 16s. 6d.; printing had come to £43 8s. 5d., and there were other expenses, and the committee are able to announce that their balance of £208 16s. 9d. at the beginning of the

year had gone up to £253 10s. 7d. Strange to say, not any of this surplus has yet been invested or placed on deposit at a bank. Advantage was taken of the presence of several of the leading growers and exhibitors to revise the schedule, and there were important modifications made in some classes and a liberal creation of new ones, especially in those known as amateurs. New classes could be created with a light heart, for with such a balance in hand, and with so generous a president, an increase was justifiable.

Mr. Smith announced his intention to withdraw his special prizes for border varieties, as he considers they have fulfilled the purpose for which they were originally intended but with that generous devotion to the Carnation so characteristic of the President, he announced his intention to offer Cups in other classes.

Mr. Douglas sought to confine the flowers shown as yellow-ground Picotees to those of the same character as the white-ground varieties—a reform greatly needed, especially as the judges appear to give the awards to yellow-grounds of questionable tint, and having more or less longitudinal flakes of colour. Mr. Douglas failed in his object, but his persistence may find its reward in the near future. The judges have been given a hint they will, no doubt, remember.

An enthusiastic vote of thanks was passed to Mr. Smith, as President, and he was unanimously re-elected to that post. The Vice-Presidents, officers, and committee were also re-elected, but few changes being made.

The Carnation and Picotee Society is now one of the most prosperous of the special floricultural societies, for the culture of the Carnation appears to be increasing by leaps and bounds. Wednesday, July 19, is the date provisionally fixed for the annual exhibition at the Crystal Palace in 1899.

THE NATIONAL AURICULA AND PRIMULA.

DECEMBER 14.—The annual meeting of the members of this Society followed close upon that of the Carnation Society, Mr. HARRY TURNER filling the chair.

This Society can be congratulated upon its progress during the past year; for though no report was forthcoming, there was an increase in the items of subscriptions and prize-money, and there appeared to be a determination on the part of the members to make the annual Auricula show an even greater success in the future. Two classes for the old florists' type of gold-laced Polyanthus were restored to the schedule, after being omitted for a few years, viz., for three plants and for one plant. It is well that a Society adding Primula to its title should have the genus fully represented at its exhibitions. The exhibition will be held in connection with the Royal Horticultural Society's meeting at the Drill Hall on April 18—too early, it is to be feared, for those who grow their plants in unheated structures; especially as after so mild and open an autumn and winter, there is reason to fear the spring may prove a retarding one.

Sir John T. D. Llewelyn, Bart., M.P., was re-elected President; Mr. T. E. Henwood, the Hon. Treasurer and Secretary; and there was but little change in the personnel of the committee.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 15.—At the meeting of this Society, held at headquarters on the above date, there were present: Messrs. G. Sherrard Ball, in the chair; J. Leemann, Thomas Statter, H. Greenwood, W. Bolton, W. Holmes, R. Johnson, J. Cypher, and T. Mills (Hon. Sec.).

J. LEEMANN, Esq., Heaton Mersey (gr., Mr. Edge), showed *Laelia anceps* Leemannii (Award of Merit); *Lycaste Skinneri*, and *Odontoglossum crispum*.

G. SHERRARD BALL, Esq., Wilmslow (gr., Mr. Gibbons), showed *Cattleya Chocoensis* var. *Stella* (Award of Merit); *Cymbidium Winnianum* (Award of Merit); *Cypripedium insigne undulatum* (Award of Merit); *C. i. Sandere* (First-class Certificate); *Cypripedium Acteus* (Award of Merit); *Oncidium cheilophorum*, *Dendrobium glomeratum* (Award of Merit); also Silver-gilt Medal for group.

G. W. LAW-SCHOFIELD, Esq., of Rawtenstall (gr., Mr. Shill), showed *Laelia anceps alba* (Bull's variety), First-class Certificate.

THOMAS STATTER, Esq., Whitefield (gr., Mr. Johnson), showed *Cypripedium insigne Sandere* (First-class Certificate); *C. i. Ernesti* (Award of Merit); *C. i. splendens* (Award of Merit); *C. i. Leopoldinum*; *C. Areidne* (Award of Merit); *C. Leeana pendulum*; *C. L. superbum*; *C. Spicerianum* var. *magnifica*; *Laelia-Cattleya Tresideriana*. Also Silver-gilt Medal was awarded for the group.

WM. BOLTON, Esq., Warrington (gr., Mr. Cain), showed *Oncidium varicosum* var. *Rogersii* (First-class Certificate); *Cattleya labiata Boltonianum* (Award of Merit); and *Cypripedium insigne* (Bolton's var.).

HV. GREENWOOD, Esq., Haslingden (gr., Mr. Gill), showed *Cypripedium Antigone*.

O. O. WRIGLEY, Esq., Bury (gr., Mr. Rogers), showed *Cypripedium insigne Sandere* (First-class Certificate); *C. i. magnificum* (Award of Merit); *C. i. Ernesti*, *C. i. Youngianum*; *C. concolor*, *C. tonsum*, *C. callosum superbum* (Award of Merit); *C. Harrisianum superbum*, *C. Minosa* (Award of Merit), *C. Tityus*; *C. Leeana magnificum*, *C. L. superbum*; *C. seedling (villosum x oenanthum superbum)*; *C. Pitcherianum* (Award of Merit); *Dendrobium Findleyanum*. A Vote of Thanks was awarded for the group.

RICH. ASHWORTH, Esq., Newchurch (gr., Mr. Pidsley),

showed *Lælia anceps* Chamberlainiana (First-class Certificate), *Cypripedium* seedling, and *Odontoglossum asperum* albens.

CHAS. PARKER, Esq., Ashton-on-Ribble, showed *Cypripedium Parkerianum* (Boxall atratum x nitens superba) (First-class Certificate).

Mr. A. J. KEELING, Cottingly, showed *Cypripedium Lily*, *C. Norma*, *C. insigne Youngianum*, *C. insigne* (yellow form), *Cymbidium Tracyanum*, and a *Cypripedium* entered as *Fairianum*, but which the Committee declined to recognise under that name.

CHESTER PAXTON.

DECEMBER 17.—The annual general meeting of the Chester Paxton Society was held in the Grosvenor Museum, Chester, on the above date, under the Presidency of Mr. N. F. BARNES, head gardener at Eton Hall.

The Hon. Secretary (G. P. MILN) submitted his annual report, which showed a profit balance of over £33, which was carried over to next year. He also reported that the membership of the Society had increased considerably during the present year, and that the fruit and Chrysanthemum exhibition held in November last had been the largest and most profitable ever held under the auspices of the Society. A hearty vote of thanks was accorded to Mr. Barnes for having occupied the presidential chair for the past three years, and in reply Mr. Barnes stated the great pleasure it had always afforded him to be identified with the Society, and the good work it had done in the district in the way of promoting the culture of hardy British fruits. Mr. John Wynne, an enthusiastic horticulturist, and one of the oldest members of the Society, was elected President for the ensuing year, Mr. Barnes and Mr. J. Jackson being elected Vice-Presidents, and Messrs. J. D. Siddall, John Dutton, A. Ellans, S. Garner, Stephen May, W. Pringle, H. Rowe, Jos. Ryder, E. Stubbs, J. Taylor, R. Wakefield, T. Weaver, and J. Weaver members of the committee.

SHIRLEY AND SURROUNDING DISTRICTS GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT.

DECEMBER 19.—The monthly meeting of the above Society was held at the Parish Room, Shirley, Southampton, on the above date. Mr. W. F. RUMMENS, C.C., presiding over a good attendance of the members.

The lecture was the second of two on "The Soil," given by Mr. E. T. MELLOR, B.Sc., London, Lecturer in Biology at the Hartley College, Southampton. The lecturer divided the subject as follows:—The relation of soil to plants, Chemical changes in the soil, Loss and replacement of nutritive substances in the soil; and each division was most effectively and profusely illustrated with lantern slides and chemical experiments of a most interesting and instructive character. Messrs. Spooner & Bailey, chemical manufacturers, Ealing, Southampton, gave the members an invitation to visit their establishment, where some interesting processes in the production of chemical manures would be shown them.

NATIONAL CHRYSANTHEMUM.

DECEMBER 19.—The Executive Committee met on the above date, Mr. P. WATERER in the chair. After the transaction of some preliminary business—

An important report was presented relating to the classification of a considerable number of new varieties, especially of the incurved type, and some additions were made to the lists of too-much-alike varieties. A recommendation from the Classification Committee was also adopted to the effect that a special circular be prepared and sent to all affiliated societies as soon as possible, giving so much of the reports of the Classification Committee as it may be expedient to publish; and also the lists of too-much-alike varieties, with an urgent request that they will print the same in their schedules of prizes, and make it binding upon their exhibitors. The necessity for the preparation and publication of a supplemental catalogue was urged, and the matter was referred to the Classification Committee to prepare the same. It was resolved that the Floral Committee meet on Wednesdays instead of Mondays as heretofore, the dates being Wednesdays, September 27; October 25, November 1, November 22, and on the show-days, viz., Tuesday, October 10; and Tuesday December 5. The meeting at the middle of November will be on Monday, the 13th; Wednesday, the 15th, being the date for so many of the leading exhibitions.

VARIORUM.

SEASONABLE ENTRÉES.

BRUSSELS SPROUTS AU GRATIN.—Carefully pick and boil in the usual way 2 lb. of prime firm Sprouts, then, when done enough, drain them well, but gently, so as not to break them. Have ready about a pint of rich thick white sauce, to which has been added the beaten yolks of two fresh eggs, four large tablespoonfuls of grated cheese, two tablespoonfuls of finely-chopped boiled Onion, and a liberal seasoning

of salt, pepper, and grated Nutmeg, then proceed as follows:—Put a few tablespoonfuls of the sauce on the dish, which ought to be a silver or fire-proof china one, and upon this arrange a close firm layer of the Sprouts; cover these with more sauce, and so on, until the ingredients are used up. The Sprouts should be piled up so as to form a neat dome-shape, and sauce should be added last of all. Smooth the surface over neatly with a wet, broad-bladed knife, sprinkle it with a mixture of grated cheese and fine bread-crumbs, and bake in a brisk oven for about twenty minutes. When thoroughly hot, and prettily coloured, garnish round the base with small daintily-fried rolls of prime bacon, and sippets of crisp, hot toast, and serve at once.

HARICOT BEANS À L'AMÉRICAINNE.—Soak a pint of small white Haricots over-night in cold water, then, next day, drain them, and put them into a stewpan with sufficient cold water to cover them; add two medium-sized whole Spanish Onions, two ounces of butter, a bunch of savoury herbs, and a seasoning of salt, then cover closely and cook gently until the Beans are quite soft, but unbroke, and the liquid has all been absorbed, after which remove the herbs and the Onions, and throw the former away, but chop the latter finely and return them to the Beans with a breakfastcupful of fresh Tomato-pulp, a tablespoonful of minced Parsley, the strained juice of a fresh Lemon, and a further seasoning of salt and pepper, then stir over a moderate fire until the whole is thoroughly hot. Serve piled up high in the centre of a hot dish, garnished round the base with minced cutlets, or croquettes, made of almost any kind of meat, or mixture of meat. Place a sprig of Parsley and a slice of fresh Lemon between the cutlets or croquettes, and serve as quickly and as hot as possible.

A FAVOURITE GERMAN DISH.—Take equal quantities of cold cooked Cabbage and Potatoes and pound them in separate bowls until quite smooth; then mix the vegetables together, add a seasoning of salt and pepper, moisten with a slice of fresh butter and the well-beaten yolks of two or three fresh eggs, and when all the ingredients are thoroughly blended, press the mixture into a well-buttered mould and bake in a moderate oven for about half-an-hour. When done enough, turn out the moulded vegetables on to a nice hot dish, garnish round about with a ring of skilfully fried small pork sausages, about 2½ inches in length, and serve the whole very hot.

A BIG LETTUCE.—There was on view at Messrs. C. Howie & Co.'s office, Market Street, a Lettuce grown by Mr. John Orr, Belgravia, which for size and shape would be hard to beat. It was produced from Webb's seeds, being of the variety Monstrous Cos, and measured about 18 inches in diameter.—*Reprint from "Diamond Fields Advertiser," October 24, 1898.*

Obituary.

MR. C. Y. MICHIE.—We regret to record the death of a prominent figure in connection with the management of the Salfeld estates, who passed away on Monday evening, the 19th inst., at his home, the Grand Entry, Cullen House. "For upwards of thirty years," relates the *Scotsman* of the 20th inst., "the name of Mr. Christopher Young Michie has been familiarly known in the North of Scotland as an authority on forestry, and an advocate of temperance principles. For the last year or so he has been suffering from an internal disease, which gradually undermined his constitution. Mr. Michie held a leading position as a forester, and had been familiar with forestry from the lowest step. He served his apprenticeship on the extensive, and well-managed estate of the Marquis of Lothian in Roxburghshire, whence he was appointed forester on the estate of the Earl of Delawarr, Buckhurst Park, Sussex. After remaining there a few years, he returned to Scotland, to take the charge of a district of the Earl of Salfeld's forest in Strathpey, where he remained

about six years. In 1866 he was promoted to be forester and ground-manager on the Cullen House estate, a position he has occupied for thirty-two years, and where he has carried out very extensive and important improvements on the estate, at first under Mr. W. G. Bryson, and since then under Mr. James Campbell, the present factor. Mr. Michie was a man of singularly varied abilities, combining the practical with the theoretical in an eminent degree. He had an interesting collection of objects of natural history, especially in connection with trees. These were publicly exhibited on several occasions. He showed great skill in constructing seats and other objects of rustic-work. Mr. Michie invented and patented an excellent and practical system of wire-fencing. Large quantities of this fencing have been used at home and exported to the colonies, being found specially serviceable on sheep farms. But Mr. Michie distinguished himself in a literary as well as in a mechanical capacity. He gained twenty of the Highland and Agricultural Society's prizes within as many years, the value thereof ranging from £5 to £20 each. He contributed largely to the Royal Scottish Arboricultural Society's *Transactions*, and gained at least a dozen medals. Mr. Michie was for many years the principal correspondent on forestry matters to several leading periodicals, and wrote at least 200 articles on practical forestry alone. His knowledge of the diseases of trees was specially full and accurate. *The Larch*, published by Messrs. Blackwood, is one of his ablest productions, and was very favourably reviewed. Another work by him, *The Practice of Forestry*, is regarded by many as the best book on practical forestry yet written. Mr. Michie's extensive experience was often called into requisition to report on forests in the North of Scotland, he having been employed by Her Majesty the Queen, the Earl of Aberdeen, and others. For Her Majesty he reported on the forest of Ballochbuie. His report on Lord Aberdeen's woods is an elaborate document, recently printed. Mr. Michie's relations with the tenantry, and all with whom he came in contact were of the most harmonious and agreeable character, his sound practical knowledge and good common-sense being universally recognised. A few years ago he received a handsome testimonial from the tenantry, contributed to most widely and spontaneously by all classes." Mr. Michie was a valued contributor of sound advice on forestry-management to the pages of this journal.

GARDENING APPOINTMENTS.

- Mr. THOS. H. USHER, late Gardener at Hoe Place, Woking, as Gardener and Steward to J. T. ROGERS, Esq., River Hill, Sevenoaks, Kent.
- Mr. F. WOODS, for the past three years Gardener to the Hon. H. SEWELL, Steephill Castle, Ventnor, Isle of Wight, as Gardener to C. MORTIMER, Esq., at the same place.
- Mr. PHILIP TAYLOR, of Letham Grange Gardens, Arbroath, as Head Gardener to AUBREY CARTWRIGHT, Esq., Edgescote Park, Banbury, Oxon.
- Mr. GEO. TAYLOR, Head Gardener at Broxmouth Park, Dunbar, desires us to correct a statement which we were led to insert in a recent issue, to the effect that Mr. JOHN G. WILSON had been appointed Gardener at that place, whereas he had been engaged by Mr. G. Taylor as Under-Gardener.
- Mr. JAMES SMITH, formerly General Foreman at Paddockhurst Gardens, Crawley, Sussex, as Head Gardener to Colonel WILKINSON, Elmhurst Hall, Lichfield, Staffs.
- Mr. H. MATHER, for over four years Foreman in the fruit-forcing department at Longford Hall, Manchester, as Head Gardener to W. GROSVENOR BEASLEY, Esq., Ryburn House, Rippenden, Yorkshire.
- Mr. J. C. TALLACH, for several years Head Gardener at Livermere Park, Bury St. Edmunds, as Head Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby, Mr. ELPHINSTONE having been obliged to retire through illness.
- Mr. S. BRIGHTMAN, four and a half years as Foreman in the Gardens at Benacre Hall, Wrentham, Suffolk, as Gardener to A. TYRELL, Esq., Berkin Manor, Horton, Slough, Bucks.
- Mr. S. BURGESS, Gardener at Golders Hill, Hamstead, has succeeded Mr. H. MARKHAM as Head Gardener to J. FRIEND, Esq., Northdown, Margate.
- Mr. G. MOUNSDON, late Foreman, Radbourne Hall Gardens, as Head Gardener to B. H. BROOKSBANK, Esq., Sandrock, Fickhill, Rotherham.
- Mr. G. T. BRIGGS, late of Loudwater House and Ascott, as Head Gardener to JAMES BROGDEN, Esq., Iscoed, Ferry-side, R.S.O., Carmarthenshire.
- Mr. WM. STANBURY, as Head Gardener to W. A. W. MUSGRAVE, Esq., Thame Park, Oxfordshire.

Mr. F. C. WALTON, late Foreman in the Gardens, Bodorgan, Anglesea, as Gardener to ERNEST DE LA RUE, Esq., Lower Hare Park, Newmarket.

Mr. A. CHEESEMAN, for the past four years Gardener at Hazelwood, Horsted Keynes, as Head Gardener to M. P. EVANS, Esq., Cookhams, West Hoathly, Sussex.

Mr. JAMES FULTON, late Gardener at Glenstal Castle, Limerick, as Gardener to W. S. GILBERT, Esq., Grim's Dyke, Harrow Weald, Middlesex.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					10ths Inch.	Ins.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.
	Above (+) or below (-) the Mean for the week ending December 17.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 2, 1898.	Below 42° difference from Mean since January 2, 1898.				
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	Day-deg.				
0	6 +	30	9	+ 338	- 260	10 +	249	62.2	3 28
1	8 +	38	9	+ 252	- 282	2 -	195	19.1	7 20
2	9 +	40	3	+ 384	- 290	5 -	169	21.3	14 29
3	8 +	37	8	+ 337	- 303	5 -	148	19.1	17 35
4	8 +	37	5	+ 279	- 318	5 -	154	20.3	16 32
5	8 +	39	0	+ 419	- 312	0 -	144	20.6	11 36
6	7 +	36	0	+ 341	- 279	5 -	216	43.6	13 31
7	8 +	42	0	+ 420	- 301	2 -	192	32.5	9 33
8	7 +	48	0	+ 412	- 195	7 -	180	33.3	11 39
9	8 +	41	0	+ 366	- 286	5 -	233	36.8	13 30
10	7 +	49	0	+ 491	- 184	6 -	192	37.8	11 34
*	6 +	67	0	+ 640	- 104	4 -	199	26.2	6 47

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending December 17, is furnished from the Meteorological Office:—

"The weather was again extremely mild in all parts of the kingdom. Heavy rain was experienced in the north of Scotland, and frequent, but comparatively slight falls in the west and north generally; over central, eastern and southern England, the rain was very slight, and mostly in the form of drizzle.

"The temperature continued unusually high, ranging from 6° above the mean in 'Scotland, N.' and the 'Channel Islands,' to 8° in most other districts, and to 9° in 'England, N.E.' The highest of the maxima were recorded either on the 11th or 12th, when they varied from 18° in 'England, E. and N.E.,' the 'Midland Counties,' and 'Ireland, S.W.' to 55° in 'Scotland, W.,' 'Ireland, N.,' and 'England, S.W.' The lowest of the minima, which were registered during the middle part of the week, ranged from 30° over central, eastern, north-eastern, and south-western England, to 36° in 'Ireland, N.,' and to 44° in the 'Channel Islands.'

"The rainfall was much more than the mean in 'Scotland, N.,' but less in all other parts of the kingdom. In most of the English districts the fall was very slight.

"The bright sunshine just equalled the mean in the 'Midland Counties,' but was deficient in all other districts. The percentage of the possible duration ranged from 17 in 'England, E.,' to 7 in 'Scotland, E.,' 6 in the 'Channel Islands,' and to 3 in 'Scotland, N.'"

CATALOGUES RECEIVED.

DUTTON & Co. (Ltd.), Welded Boiler Works, Worcester—Hot-water Boilers for heating purposes—illustrated.
DICKSONS & Co., Waterloo Place, Edinburgh—Forest and Ornamental Trees and Shrubs, Rhododendrons, &c.

FISHER, SON, & SIBBAY, Ltd., Handsworth, near Sheffield—Fruit, Rose, Forest, and Ornamental Trees, Shrubs, &c.
FREDERICK ROEMER, Quedlinburg, Germany—Wholesale List of German Flower and Garden Seeds.

MARTIN GRASHOFF, Quedlinburg, Germany—Wholesale List of Agricultural and Garden Seeds.

ERNST BENARY, Erfurt, Germany—Trade Catalogue of Agricultural and Garden Seeds.

LEOPOLD BOTTELBERGE, Victoria Nurseries, Melle, near Ghent, Belgium—Special offer of various species of Plants.

T. SMITH, Daisy Hill Nursery, Newry—Roses.

CHR. LORENZ, Erfurt, Germany—Seeds.

SUTTON & SONS, Reading—Seeds.

J. R. PEARSON & SONS, Chilwell Nurseries, near Nottingham—Chrysanthemums.

JAMES CARTER & Co., 237, 238, and 97, High Holborn, London—Seeds.

W. WHITELEY, The Nurseries, Hillingdon Heath, Uxbridge—Decorative plants for Christmas trade.

ALEX. DICKSON & SONS, 55, Royal Avenue, Belfast—Seeds.

JOHN WOOD, Penrith—Seeds.

DICKSON, BROWN & TAIT, 43 and 45, Corporation Street, Manchester—Seeds.

CLARK BROS. & Co., 65, Scotch Street, Carlisle—Forest, Ornamental, and Fruit-trees, Roses, &c.

SAMUEL DOBIE & SON, Heathfield Gardens, Chester—Seeds.

LITTLE & BALLANTYNE, Carlisle—Seeds.

JAMES VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea—(1) Seeds, (2) Chrysanthemums, (3) Roses, (4) Herbaceous Plants, and Hardy Florists' Flowers.

NOTICES TO CORRESPONDENTS.

BOUVARDIAS: C. R. T. We think that the injury to the flower resulted from fog. See reply to "T. W., Violets Damping," in our last issue.

CELERY SPONGY: J. P. The plants may have had a good deal of water at long intervals of time, but that was not enough last season, the drought being so severe. To have tender, crisp, solid stalks, the plants should be kept in a uniformly moist condition during the hot weather, and until moist autumn weather sets in, and even then occasional soakings are beneficial, for the bigger the crown of leaves the greater the need of root moisture, the whole soil and manure having become permeated with roots. Your later successions have been grown among Apple-trees and Nut-bushes which made the soil dryer than it would have been, and the shade from them, would not be favourable to stocky, firm growth. The stalks sent for inspection are not Major Clarke's Red, but some white variety. The leaf miner can only be kept in check by diligently hand-picking the worst leaves or parts of leaves, and nipping the grub within the tissues.

CURRENT-BUDS: Kentish. Affected by the Currant Bud-mite. Cut off and burn all affected shoots. There is no known remedy short of this.

GRUBS IN THE SOIL: S. L. C. The larvæ of a weevil, very destructive to the roots of plants, and found in great numbers in pasture-land. Loam from infested land should be stacked for at least twelve months before it is made use of, and the stack kept quite free of herbage, thus starving any of the weevils present in the soil. The grub cannot be killed by any substance applied to the soil in a flower-pot that will not also kill the plant.

HORTICULTURAL CLASSES: D. E. S. We cannot say.

HORTICULTURAL EXAMINATION: S. P. Yes, your books are well selected, but do not trust to books exclusively, or even mainly. Get as proficient as you can in your garden-work, and, as far as you can, consult your books with reference to each detail of your work, endeavouring to ascertain the reason why you do this or that; why this is good practice, and why that is not good.

HOVEA CELSI SEED: A. P. Try Messrs. Balchin and Sons, nurserymen, Hassocks Gate, Brighton; or Messrs. J. Veitch and Son, Royal Exotic Nursery, Chelsea, S.W.

HYBRID ORCHIDS: A. E. H. In the matter of the hybrid Orchid you name, the committee of the Royal Horticultural Society unanimously agreed that it was the same as the one previously shown, so far as they could judge by the flower staged. With secondary crosses it is impossible to say what may or may not take place in the progeny of apparently different crosses.—T. A. The temperature and treatment you propose for the Orchids named during the winter seems correct.

NAMES OF FRUITS: A. Dunbly. 2, Lane's Prince Albert; 3, Dutch Mignonne; 6, New Hawthornden; 7, Dumelow's Seedling; 4, Golden Noble; 5, Beauty of Kent; 3, probably Winter Strawberry.—J. F. Hicks. Golden Noble.—A. S. 4, New Hawthornden; 3, Braddick's Nonpareil;

others unknown, and of poor quality, probably local varieties.—J. H. S. 1, Dumelow's Seedling, a very fine specimen; 2, New Hawthornden.—W. H. Smith. 1, Annie Elizabeth; 2, Frogmore Prolific; 3, not known; 4, Alfriston.—South Bricks. Pears: 3, Ne Plus Meuris; 6, Vicar of Winkfield; other Pears over ripe; Apple: 4, New Hawthornden.—J. S. Apple: White Paradise.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—E. C. 1, Abies numidica?; 2, Picea sitchensis; 3, Abies balsamea; 4, Relinospora plumosa of gardens; 5, Retinospora lycopodioides of gardens; 6, Retinospora squarrosa of gardens.—J. A. T. The two varieties of Cypripedium insigne flowering out of an importation are of ordinary merit. The one with purple spots in the upper sepal is near to the old C. insigne Maulei; and the other is of the same section, though inferior to C. insigne Bohnhoffianum.—G. W. C. It is a form of Odontoglossum Andersonianum, and if it maintains the size and brightness of colour displayed in the bloom sent, a very fine variety of it.—W. Colvill, Bath. Your box was completely smashed in the post. The contents appear to have been a yellow Chrysanthemum flower. You had best send varieties of florist's flowers to some nurseryman who grows them largely, and furnish him with full particulars as to the habit of growth of the plant.—W. M. Buddleia auriculata; see Master's Gard. Chron., Nov. 9, 1889, p. 529.

ORCHIDS: Antwerp. The insect injuring your plant is the grub of Isosoma orchidearum, family Chalcididae. The plants should be isolated. (See Gardeners' Chronicle, vol. xix, 1896, p. 501.)

POTATOS AT DUBLIN SHOW: Subscriber. The copy of the Gardeners' Chronicle containing the account of the show in question can be obtained on application being made to the publisher. The price, together with postage, is 3½d.

PYRUS (CYDONIA) JAPONICA: Kentish. Propagation by means of layers, suckers, and green unripe cuttings. The fruits of P. Maulei mak, a nice preserve when mature. Although the type species is hardy in Britain, it requires a warm situation to ripen its fruits perfectly. The plant stands cutting, and bushes may be pruned like the Gooseberry, only leaving the lateral spurs longer. On these the blooms come.

SEED FOUND IN GARDEN: S. P. Some variety of Ricinus (Castor-oil) probably. Smashed in the post.

SKIMMIA: L. B. Skimmias are dioecious, i.e., the male and female flowers are on different plants, so that the one you send in bud is probably the male of S. Fortunei, while the berries are certainly those of that species, misnamed in gardens S. japonica.

SPINACH PLANTS INJURED BADLY: Kentish. The plants have been checked by a parasitic fungus—Peronospora effusa. Spraying with potassium sulphide solution would check the spread of the disease. Affected plants should be collected and burned; if allowed to rot on the ground, the disease would probably appear again next season if Spinach should be sown thereon.

WEED IN CULTIVATED LAND AT THE CAPE: D. Rye, introduced with European seeds, we suppose. It would form a good forage-crop.

COMMUNICATIONS RECEIVED.—Gillespie Brothers.—E. W. B. W. T.—G. H.—F. A. W. Ithaca.—Dr. R. Vienna.—J. Moir.—E. W. & Son.—W. B. Hemsley.—R. K.—F. A. W.—H. C.—H. T. M.—A. J. L.—J. O. B.—J. N.—H. M.—T. Turton.—B. F.—H. B.—W. J. C.—W. K.—J. W. McH.—W. H. Y.—A. G. C.—G. D.

SPECIMENS, PHOTOGRAPHS, &c., RECEIVED WITH THANKS.—A. O.

DIED.—On December 16, at Iddesleigh, Sevenoaks, ALICE MARY, the dearly-loved and deeply-lamented wife of HARRISON WEIR.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets, see p. viii.)



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 31, 1898.

THE GREEN GAGE GROUP OF PLUMS.

THE many vicissitudes to which the common garden Plums have been subject in the course of several centuries of cultivation, and through their introduction to many different lands, have naturally developed various interesting modifications of the species. These modifications were so numerous and conspicuous that Linnæus divided his species *Prunus domestica* into fourteen botanical varieties. Most of the variety types which he accepted from Bauhin are still known to us in some form or other at the present day, though botanists and horticulturists seem largely to have lost sight of this classification which he made. I have recently made an effort to trace these groups as distinguished by Linnæus,* and I find that the one which has had the most interesting and eventful history, and the one which gives the best key, apparently, to the horticultural evolution of the whole species, is the Green Gage, or Reine Claude group. This is the one, doubtless, which Bauhin meant to characterise as *Pruna parva ex viridi flavescentia*, and which Linnæus named in the first edition of *Species Plantarum* with the trinomial *Prunus domestica* var. *cereola*.

What seems to have been this same type of Plum was mentioned by several of the pre-Linnean writers; but the first really satisfactory reference to it is in Bauhin's *Pinax*. From that time to this the Green Gage or Reine Claude Plums have played an important part in all horticultural literature, as the following chronological conspectus of the more important references will show.

BIBLIOGRAPHY.

1671. Bauhin, *Pinax*, 443, gives *Pruna parva ex viridi flavescentia*, which may perhaps be intended to describe this variety.
1700. Tournefort, *Institutiones Rei Herbariæ*, follows Bauhin, giving *Prunus fructu parvo, ex viridi flavescente*.
1729. Langley, *Pomona*, describes both Reine Claude and Green Gage in the evident belief that they are distinct varieties. Both are figured, though poorly, the former being considerably the larger. Of Reine Claude he says, "It is an excellent Plum, yellow next the sun when ripe, and cover'd with a Pearl colour'd Flew. The Pulp is yellowish within, very firm, comes from the stone, and is very full of an excellent sweet rich Juice, a good Bearer: Ripe, August 8."
1731. Stephen Switzer, in *The Practical Fruit Gardener*, 2nd ed. (London), describes Reine Claude and Green Gage separately, evidently quite unsuspecting of any synonymy.

1752. Miller, *Gardeners' Dictionary*, 6th ed., has "Prunus fructu rotundo e viridi flavescente, carne dura, suavissimo. La Grosse Reine Claude, Large Queen Claudia, by some Dauphiny. At Tours it is called Abricot verd; at Rouen La verte bonne; in other places Damas verd, or Tromp-valet. This is one of the best Plums in England."

1753. Linnæus, in the *Species Plantarum*, 1st ed., gives *Prunus domestica* var. *cereola* = *Pruna parva ex viridi flavescente*, Bauh.

1758. Knoop, in the *Pomologia* (Holland), recognises Reine Claude as a group, but does not refer to the name Green Gage.

1768. Duhamel, in the *Traité des Arbres Fruitières* (Paris), gives: "Prunus fructu magno, paululum compresso, viridi, notis cinereis, and rubris consperso." Dauphine, Grosse Reine Claude, Abricot verd, Verte-bonne; Duhamel gives a good uncoloured figure, says: "Cette Prune mûrit au mois d'Août. Elle est sans contredit la meilleure de toutes les Prunes pour être mangée crue."

1803. William Forsyth, in a treatise on the *Culture and Management of Fruit Trees in England*, so called American edition; edited by William Cobbett, and published in Albany, gives Large Queen Claudia, saying: "This is an excellent Plum, of a yellowish-green, and ripens about the beginning of October." He also gives Green Gage, saying: "It is of an exquisite taste, and eats like a sweetmeat; its colour and size sufficiently distinguish it from any other. It ripens in August and September." He adds: "There are several varieties of this Plum (Green Gage), and all good."

1812. Brookshaw, in his *Pomona Britannica*, recommends Green Gage, and gives a good figure, but does not mention Reine Claude.

1816. William Salisbury, among *Hints addressed to the Proprietors of Orchards*, gives Green Gage.

1823. Henry Phillips, in the *Pomarium Britannicum*, 3rd ed., London, says: "This latter Plum (Green Gage) was called the Reine Claude from having been introduced into France by Queen Claude, wife of Francis First of that country, but it bears various names in different parts of France. This Plum received the name of Green Gage from the following accident: The Gage family in the last century procured from the monastery of the Chartreuse at Paris a collection of fruit-trees. When these arrived at the mansion of Hengrave Hall the tickets were safely affixed to all of them, excepting only to the Reine Claude. . . . The gardener, therefore, being ignorant of the name, called it, when it first bore fruit, the Green Gage."

1825. De Candolle, in the *Prodromus*, vol. ii., p. 533, gives *Prunus domestica*, Linn., var. *Claudia*. Persoon Ench. 2, p. 35, refers to this variety both Grosse Reine Claude and Petite Reine Claude of Duhamel, and Reine Claude Violette of Loisel.

1825. G. Bliss, in the *The Fruit-Growers' Instructor*, London, speaking of Green Gage, says: "This Plum is too well known to require much being said of it." He does not mention Reine Claude.

1846. Poiteau, in the *Pomologie Française*, gives a coloured plate and description of Reine Claude, and says it is reproduced more or less truly from seed; but notes in another place that there are several varieties very different in quality.

1855. Loudon, in the *Encyclopædia of Plants*, gives Green Gage, and makes Reine Claude a synonym of that name.

1866. Mrs. William Bayle Bernard, in *Our Common Fruits*, London, uses the name Green Gage for a variety evidently well known.

1876. Koch, in the *Die Deutsche Obstgehölze*, Stuttgart, says "That Italy is certainly not the home of this variety." He quotes Bechstein as of

the opinion that it came from North Asia. Koch seems to share this opinion for the want of a better hypothesis:—"Sie haben so viel mit den echten Damascenen, andertheils mit den Zwetschen gemein, dass man der Meinung sein könnte, sie seien aus einer Kreuzung beider hervorgegangen."

1882. Lauche, in his *Deutsche Pomologie*, mentions a large Reine Claude, and several other Reine Claudes, and remarks that nothing is known of the origin of this very old and generally distributed sort. It probably came from Italy to France, and has been distributed from there.

1896. Bredsted, in the *Haandbog i dansk Pomologi*, cites Green Gage, referring to Lindley, Downing, Thomas, and Hogg, as authorities for the nomenclature. He alludes also to twelve varieties of Reine Claude besides synonyms.

The bibliography of this group in America is as follows:—

1823. William Prince, *A Short Treatise on Horticulture*. New York. In this work are enumerated several Gages, also Little Queen Claudia, and Large Queen Claudia, saying that the latter is "the parent of all the class of Gages."

1833. William Kenrick, *The New American Orchardist*. Boston. Describes Green Gage, and gives, in a considerable list of synonyms, "Great Queen Claude of the English."

1839. Edward Sayers, *The American Fruit Garden Companion*, 2nd ed. He describes the Green Gage, and several other Gages, without mentioning Reine Claude.

1845. Downing, *Fruits and Fruit Trees of America*, 1st ed., describes Green Gage, referring to Langley, Lindley and Thompson as authorities for the nomenclature. He adds a long list of synonyms, including Reine Claude.

1849. S. W. Cole, in *The American Fruit Book*, gives Green Gage, and recognises Reine Claude as a synonym.

1857. J. J. Thomas, in the *American Fruit Culturist*, gives Green Gage, with Reine Claude as a synonym, also Reine Claude de Bavay separately, together with other Gages.

1857. Thomas Gregg, in the *Handbook of Fruit Culture*, New York, gives as distinct varieties Green Gage, Reine Claude de Bavay, and Reine Reine Claude d'Octobre.

1857. E. J. Hooper, *Western Fruit Book*. In a list of Plums, mostly of European origin, this author gives Green Gage without comment, and without other varieties of this group.

1859. F. R. Elliot, *Western Fruit Book*, 4th ed., cites Green Gage (syn., Reine Claude) and Reine Claude de Bavay.

1872. Barry, *Fruit Garden*, mentions Green Gage and Reine Claude de Bavay separately.

HISTORICAL SUMMARY.

The Reine Claude or Green Gage group of Plums is of early origin. Its birthplace may have been southern Europe or eastern Asia. Various countries have been named in this connection with about equal uncertainty. It was introduced into France from Italy by Queen Claudia about 1500 (Francis I. of France lived 1494-1547). From here it was distributed through the remainder of Europe. It was frequently propagated from seeds, so that many diverse forms were early extant. The name Green Gage was given in England to a lot of Reine Claudes from which the name had been lost; but in other places Reine Claude continued to be in cultivation under its rightful name or under the even earlier name of Verdoch or Verdochia. Regarding this passage in the history of the variety, Hogg gives the following interesting notes:—

"The Green Gage is supposed to be a native of Greece, and to have been introduced at an early

* *Botanical Gazette*, December, 1898.

period into Italy, where it is called Verdochia. From Italy it passed into France during the reign of Francis I., and was named in honour of his consort Queen Claude; but it does not appear to have been much known or extensively cultivated for a considerable period subsequent to this, for neither Champier, Olivier de Serres, Vautier, nor any of the early French writers on husbandry and gardening seem to have been acquainted with it. Probably about the same time that it was introduced into France, or shortly afterwards, it found its way into England, where it became more rapidly known, and the name under which it was received was not the new appellation which it received in France, but its original Italian name of Verdochia, from which we may infer that it was brought direct from Italy. It is mentioned by Parkinson in 1629 under the name of Verdoch, and, from the way he speaks of it, seems to have been not at all new or even rare. It is also enumerated by Leonard Meager in the 'list of fruit which I had of my very loving friend, Captain Gurle, dwelling at the Great Nursery, between Spitalfields and Whitechapel,' and is there called Verdocha. Even so late as the middle of the last century, after it had been re-introduced and extensively grown under the name of Green Gage, it continued to bear its original title, and to be regarded as a distinct sort from the Green Gage. Hitt tries to describe the distinction, but as he also tries to show that Reine Claude is distinct from Green Gage his authority cannot be taken for more than it is worth; a remark which may safely be applied to all our pomologists of the last century. Miller also laboured under the same misapprehension as Hitt, for in his dictionary he says, speaking of the Grosse Reine Claude:—'This Plum is confounded by most people in England by the name of Green Gage.'

"We have seen, therefore, that the generally-received opinion that this valuable Plum was first introduced into England by the Gage family is incorrect, but that it must have existed for considerably upwards of a century, at least, before the period which is generally given as the date of its introduction."

The variety apparently came to this country first from England under the name of Green Gage. Since that time, however, numerous importations have been made from France in which the same tribe passed under the name of Reine Claude. For the most part the similarity or identity of Green Gage and Reine Claude has been recognised by the best pomologists of America, even from its first introduction.

At the present time there are two principal varieties of this type in the market. The first is distinctively the Green Gage, bearing small early Plums on a dwarfish tree. The second is Reine Claude de Bavay, a stronger grower, later in ripening, with larger fruit. This distinction, however, is not always understood, though probably a majority of the best nurserymen take this view. There are various other Green Gages, but they have mostly local names and reputations, and are not confounded with the two types mentioned above.

Still it is an open question what a man would get if he ordered Green Gage or Reine Claude from ten different nurserymen.

PRESENT STATUS.

Recent American nursery catalogues of the better class, list usually two varieties. The first of these is called Green Gage, though Reine Claude is frequently entered as a synonymous name. The second is called Reine Claude de Bavay, or simply Reine Claude. It is a later, larger, and better variety than the former. Besides these two there are dozens of varieties of the same group named and recognised, but grown only locally. I note that leading English nurserymen list both Green Gage and Reine Claude de Bavay, as, indeed, do the French nurserymen. In one French catalogue

which I recently examined, there were fifty varieties of this group listed, and about 150 synonyms given. This serves to show somewhat of the present importance of the group. *F. A. Waugh.*

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM INSIGNE, HAREFIELD HALL VARIETY.

THE general opinion of those who saw this gigantic and beautiful variety, when it was shown by Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr., Mr. Holbrook), before the Orchid Committee of the Royal Horticultural Society, December 13, 1898, on which occasion it was awarded a First-class Certificate, and its grower a Cultural Commendation, was that it was far ahead of any other variety of the species in point of size and form, and equal to the best in general beauty.

It will be well to record the carefully-taken measurements. The dorsal sepal is exactly 3 inches across at its widest, and $3\frac{1}{16}$ inches in height. The lower sepals are 2 inches wide, and nearly 3 inches long. The petals, which are flat and almost horizontally extended, measure 6 inches from tip to tip, by 1 inch in width. The lip is 2 inches wide at the upper angles of the side-lobes; and $2\frac{1}{2}$ inches in length. The staminode is very large, and of a bright-yellow. In colour the dorsal sepal is pale greenish-yellow, with large brownish-purple blotches on the lower half, the marginal half being pure white, with clusters of violet spots in the upper portion. The lower sepals are yellowish-cream coloured, with a few purple dotted lines; the lip and petals yellow, veined and tinged with brownish-purple.

It has been cultivated by Mr. Ashworth since early in 1894, and was first shown by him under the above name at the Wilmslow Chrysanthemum Show in 1895. In 1896 Mr. Ashworth again showed it at the Drill Hall, when Major Mason showed what appeared to be the same thing as *C. insigne* giganteum. *James O'Brien.*

TREES AND SHRUBS.

PYRUS crenata is one of the handsomest of the genus as regards its foliage, but it is not nearly so often seen as its merits entitle it to be. It is one of the Asia or White Beam section, with oblong-acute, crenated leaves about 7 inches long by 4 inches in breadth, and covered with fawn-coloured down on the under surface overlying the nerves. The leaf-stalk and the principal nerves are of a dull red colour. We can speak of it as a good town tree, well suited by its habit for squares and even streets, if it could be had in sufficient quantity. But what we wish specially to call attention to now is the manner in which the leaves remain on the tree, in spite of wind and rain, fog and frost. Though the days of its foliage are numbered, yet it has retained its leaves long after other trees in the neighbourhood have become bare. It was figured in the *Gardeners' Chronicle* for January 3, 1874, p. 17.

THE CRATÆGUS (THORNS).

Several little-known members of this genus may be recommended as being highly decorative when in flower or fruit. Especially is this the case with *Cratægus punctata*, or the spotted-fruited Thorn. Although this was introduced from North America as early as 1746, a specimen tree of it is by no means common. A fine tree, however, some 15 feet high, which I noted recently, had a strikingly ornamental appearance. Its large-sized fruits were produced in such profusion as to be very conspicuous. In colour they are bright scarlet or coral-red, with numerous small black dots, and are generally produced in clusters of from four to seven fruits. In size they are nearly as large as the berries of *Rosa rugosa*, but differ in shape. The tree flowers during May and June, and in colour are pure white. In this respect alone it is a valuable decorative tree. The foliage is quite distinct from that of the common

Thorn, being obovate and wedge-shaped, green in colour, glabrous above, and serrated along the margins, varying in length from 3 to 4 inches. It is generally propagated by grafting upon the common Thorn.

There are several varieties of this species which differ in habit and in the colour of their fruits, but all of them are worthy of notice. Probably the most common is *C. punctata rubra*, which has white flowers and deep red or crimson-coloured fruits. It is more spreading, and attains a height of from 20 to 30 feet. In its young state it has formidable thorns.

C. p. r. stricta has also crimson fruits and white flowers, but its habit is rather fastigate than spreading; it is, however, exceedingly ornamental.

C. p. aurea differs from all other varieties in having yellow fruit, which are covered with minute dots. Its habit is spreading, like that of *C. p. rubra*, and its leaves are ovate in shape, deeply dentated, and with much longer leaf-stalks. Its flowers are also white, and are produced in great abundance during May.

C. p. brevispina is very distinct; its fruits are large, and in colour deep purplish-red. It is probably more rare than any of the varieties, although sometimes seen as small trees in nurseries and botanic gardens.

Another species also very noticeable is the Douglas Thorn, *C. Douglasii*. In growth it forms a low-growing tree or shrub, seldom exceeding 15 feet in height. The fruits are very dark purple, and roundish in shape; they are produced in enormous quantities. The leaves vary in shape from oval to ovate, and are very deeply serrated. In colour they are green, advancing with age to purple, and are very glabrous on the upper surface. This is also a native of North America, and to judge from the specimens I have seen, it is a distinct and highly decorative tree. *E. S., Woking.*

THE ROCK GARDEN.

CROCUS LÆVIGATUS.

ALTHOUGH smaller than many of the late-flowering Crocuses, this species is valuable because of its prolonged flowering period, and its ability to withstand bad weather. The flowers are small, and are not elevated on long tubes; they thus offer but little opportunity to the winds and rains of autumn to injure them. The segments of the flower are of stout substance, and are produced in greater succession than those of most other species.

It is variable in its colour, so that an increased demand for it would probably lead to the introduction of several varieties not easily obtained at present. The segments vary in colour from purple to white, and there is much variation in the outer markings. In his *Monograph of the Genus Crocus*, plate xlix., Mr. George Maw figures four different markings or colourings of these outer segments, and others are to be met with among cultivated plants. The habitat of the species include the Morea, the mountains about Athens and the Cyclades. Its floriferousness is also observed by Mr. Maw, who says that the flowers appear "from the end of October to Christmas, and often late into the spring, many flowers being produced from each corm."

Although included in his monograph, *C. lævigatus* is not mentioned in the *Synopsis of the Genus Crocus* by the same writer, which appeared in the *Gardeners' Chronicle*, vol. xvi. (1881), p. 102 *et seq.*, to which I have often been indebted for much valuable information regarding the Crocus. This species is included among the nudiflora, or species without a basal spathe, and the section of Fibro-membranacei of Maw, and in Mr. J. G. Baker's arrangement in the section Schizostigma.

MR. WHITTALL'S GIANT SNOWDROP.

Those of us who have had the privilege of receiving from our open-hearted friend, Mr. Edward Whittall of Smyrna, bulbs of his newly-discovered variety of *Galanthus Elwesii*, have been watching expectantly the progress made by the plants. Now that some of



FIG. 140.—GLADIOLUS QUARTINIANUS SUPERBUS: COLOUR OF THE FLOWERS YELLOW, DEEPLY FLUSHED WITH CRIMSON.

the flowers have opened, we have an opportunity of estimating their worth and comparative size. It appears to the writer that this Snowdrop will be an acquisition. This is all the more pleasing, as one lot of bulbs received from him some years ago, and which he expected would yield superior flowers, proved a disappointment. I hope we may at length have an opportunity of attaching to a Snowdrop the name of one who has been at trouble, expense, and even danger, as we have so recently realised, to collect and distribute so liberally new plants to enrich our gardens. S. Arnott, Carsethorn, by Dumfries, N.B.

GLADIOLUS QUARTINIANUS SUPERBUS.*

FOR the opportunity of figuring this fine Gladiolus we are indebted to Mr. Tillett, of Norwich (fig. 140). The corms were received from Delagoa Bay, and when flowers were produced it was seen that they were much finer than those of the species as figured in the *Botanical Magazine*, t. 6739, on which account it has been named at Kew as a variety *superbus*. The species occurs over a wide area in tropical and sub-tropical Africa, and reaches a height of 8000 feet in Masailand. The colour of the flowers is yellow, deeply flushed with crimson.

SCOTLAND.

GLAMIS CASTLE, FORFAR.

I STARTED from the south of England at an early date in September, when the effect of the drought there was still painful to the eye. The pleasure was a great one then to visit the rich verdant glades in the county of Forfar, famed alike for its rich pasturage and delightful scenery. The county is pleasantly dotted with extensive estates, all of which are well timbered, and have very handsome gardens. Chief among them is Glamis Castle, the seat of the Earl of Strathmore. The Castle is no modern structure, but a substantial and noble-looking edifice, dating back to 1034, at which time it was a royal residence. (See Warden, in his *Ancient Castles*.) It was subsequently the scene of the death of King Malcolm II., but has been in the hands of the Lyon (or as formerly known, De Lyon) family since 1066.

The situation is about ten miles in a north-easterly direction from the thriving city of Dundee, and about four miles from Thrunis (Kerriemuir), the birth-place, and for many years the home of the world-wide known author, J. M. Barrie. The position is a sheltered one, and judging from the high state of agriculture in the immediate neighbourhood, the subsoil is a suitable one for garden crops generally.

The fine herd of polled Angus cattle on the Earl of Strathmore's estate, though primarily a testimony to the excellent system practised by the breeder, is in a lesser degree evidence of the uncommonly rich quality of the pasture. It will be remembered that the premier beast in the recent exhibition of the Smithfield Club was one from this herd, and the large number of such cattle that are to be seen at Glamis, form one of the most marked features upon the estate.

Landscape effects during the last century seem to have been very little studied, or practised, and the grounds surrounding the Castle have been disturbed but very little. The building stands out majestically from trees of noble mien, which, though by no means numerous, are yet sufficiently so to add such picturesqueness to the scene that no amount of modern gardening could better. There is not much flower-gardening immediately near the Castle, and it is so arranged that while the effect of a few small flower-beds may be seen from the windows overlooking, there is no vulgar glare to mar the peaceful aspect of the situation.

The kitchen and flower gardens are situated a little way from the mansion, and are so arranged that none

* *Gladiolus Quartinianus*, A. Rich., *Fl. Abyss.*, ii., 307; Baker, in *Bot. Mag.*, t. 6739; *Handbook of Iridaceae*, p. 213.

of the former, and but little of the latter, are seen from the windows; yet they are in close proximity, and readily get-at-able. On the occasion of my visit I was fortunate enough to find Mr. Wilson, the head gardener at home, and in just the spirit to discuss the various choice crops for which these gardens have long been famed.

The earlier crop of Grapes had been consumed, but in the main crop and later houses there were good crops of serviceable bunches; but here, as in several other gardens in Scotland which I visited, there were indications that the season had not been quite favourable to high-class Grape culture. Peach-trees were looking well, and bore evidence of careful culture.

Mr. Wilson and his employers were evidently fond of tuberous-rooted Begonias, as I remarked thousands of seedlings of much promise, besides a houseful of sturdy plants in the best possible condition, and they reminded me of similar displays in the Forest Hill nurseries.

Mr. Wilson has succumbed to the Malmaison Carnation craze, and I found the nucleus of a sound stock of the blush and pink-flowering varieties, in addition to several of the newer varieties raised in the gardens of Mr. Martin Smith.

Of Orchids, the deciduous *Calanthes* appear to predominate, and a structure is entirely devoted to their culture, which has proved very successful.

Kitchen-garden crops were all that could be desired, and afforded a pleasant contrast at the time to vegetable crops in southern gardens.

Adjoining a long walk leading to the flower-garden were extensive plantations of Border Carnations which had flowered, and numerous layers awaiting transplantation. The "grass" and remaining flower-stems bore unmistakable signs that a rich flower-harvest had been experienced.

In the flower-garden the modern "dot" system has not been closely followed, masses of Begonias, Pelargoniums, and *Calceolarias* being planted with charming effect. When thoroughly enjoying the picture these afforded, I was forced to the conclusion that if the surroundings be suitable, the system of "massing" the different plants in the flower-garden has many charms, that should not fail to merit appreciation. J. F.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By J. W. McHATTIE, Gardener to the Duke of WELLINGTON, Strathfieldsaye, Hants.

Savoy Cabbage.—The stamps of Early Ulm and Tom Thumb Savoy, the heads of which have been cut for use, should be pulled up and the land manured and dug, it being unprofitable to leave the stumps of dwarf Savoy with the idea of obtaining sprouts from them. The later and larger Savoy should be relieved of all decayed leaves or burst heads.

Celeriac.—Any plants of this crop remaining in the ground should be lifted and stored in damp sand, or if left in the ground some soil, straw, or bracken should be placed over the tubers as a protection against frost. Celeriac is a useful vegetable, and a delicious salad when cooked.

Small Salads.—Successional sowings of Mustard-and-Cress in shallow boxes should be made at intervals of four to five days, placing the boxes in mild heat. Some more Radish-seeds may be sown on mild hotbeds, or between the rows of the early forced Potatoes. A small quantity of Cabbage Lettuce-seed may be sown in shallow pans or boxes, and placed close to the glass in a warm house. The Lettuces growing in pits and frames and in the open border should be kept free from decaying foliage, air being given on fine days to those growing in frames. Chicory roots may be put into the Mushroom-house, or other warm, dark, moist place in order to keep up the succession of blanched heads.

Horseradish.—It is good practice to dig up the whole of the plants and store the best roots in sand, the thongs and small pieces being similarly reserved for making new plantations. These sets should by preference be straight pieces from 10 to 12 inches in length, with a single crown. The new plantation should occupy a piece of good land

that has been trenched and well manured, the manure being placed at the bottom. Sometimes Horse-radish is planted under the shade of trees or in some out-of-the-way corner; but this is mistaken practice, and I prefer to plant every year on fresh land in an open spot, the sets being dropped into deep holes (2 feet) at 14 inches apart. In shallow soil, excellent roots can be grown on ridges capable of holding three or four rows each, by which means a good depth of soil is obtained.

Sorrel.—If Sorrel be planted in such a manner that a frame or two can be placed over a few rows, the supply of leaves will be kept up even in the winter; and failing this method of forwarding growth, some of the roots may be lifted and forced in mild heat.

General Remarks.—At this season the future plan of cropping the garden should be sketched, and the quarters for and the extent of each of the more important crops decided upon. In this way, each crop can have the land that is to carry it suitably prepared. Most crops need manure, and some of them a great deal; others, like Peas, Leeks, &c., are the better for dressings of potash, or of salt, sulphate of ammonia; and all crops are benefited by a deep digging of the land.

PLANTS UNDER GLASS.

By W. MESSENGER, Gardener to H. C. BERNERS, Esq., Woolverstone Park, Ipswich.

Solanums.—To do these plants well, cuttings should be taken at an early date from plants that have not fruited, and which have been started in warmth. The soft-growing ends make good cuttings, and these strike readily in sandy soil when placed in bottom-heat of 75° to 80°. When rooted, let them be potted singly in small 60's. As the plants grow, the shoots should be pinched occasionally, to give increased bushiness. The too-oft repeated pinching gives a very compact form that is not liked by all persons, whereas two, or at the most, three, pinchings give a lighter, more graceful crown, with long shoots, and these, when well-berried, have a very pretty appearance. Repeated small shifts are required, and cultivation in an intermediate-house until the month of May, when they may go into cold frames, or out-of-doors.

Dracenas.—The tops of leggy plants which have been furnished with roots by one or other of the recognised methods, may now receive a small shift. Few plants are more easily checked, or which go back in condition quicker than *Dracenas* when the roots are much confined in pots. When repotting the newly-rooted tops, the new soil should be warmed, and the work performed in a warm-house, preferably where the plants are growing. Good drainage is very necessary, and water must be very carefully afforded, an excessively moist soil causing the roots to decay, or the plants to get generally into bad health. Let the plants be kept in a house having a warmth of 65° at night. Those plants which are repotted at this season will grow slowly, and be in excellent condition for repotting late in the month of February, and then with the increase of solar heat and light, growth will be rapid.

Codiaeums (Crotons).—It is not advisable to induce a too early growth in any of the stock of plants that are needed for immediate decorative purposes, as the lack of colour in the young foliage detracts from the beauty of the plants. The night warmth of the *Codiaeum*-house should not fall below 60°, and a small amount of air should be afforded when the weather is very favourable for so doing. This applies to the plants in use, as the cooler conditions hinder growth being made and conduce to hardness. The young plants which have to be pushed on early in the year being now in thumb or other small sizes of flower-pots, should receive, if much cramped at the roots, a small shift forthwith. Be particular in keeping *Codiaeums* thoroughly clean, and at this season the work of sponging can be done now with less injury than later, when the plants possess tender young foliage. Great care should be taken to guard against infestation by thrips.

Winter-flowering Begonias.—As the plants of Gloire de Lorraine cease flowering they should be cut down close to the soil, and placed in an intermediate-house, keeping the soil somewhat dry. Take cuttings when shoots fit for the purpose are obtainable, and insert them in sandy soil round the rim of the cutting-pot, striking them in a propagating-frame or under a bell-glass in the propagating-house. Begonia cuttings inserted early in the year are usually slow in making roots, and require much care. Batches of cuttings

may be inserted at intervals up to the end of the month of April, if succession of flowers are wanted. Later-flowering species and varieties should be encouraged, with occasional applications of manure-water and soot-water.

HARDY FRUIT GARDEN.

By W. H. DIVERS, Gardener to the Duke of Rutland, Belvoir Castle, Grantham.

Freshly-bought Trees.—As soon as convenient after fruit-trees have been obtained from the nurseries, they should be provided with durable labels, or disappointment may result, owing to the varietal names upon the parchment labels having become obliterated by the weather. Labels manufactured from metal, and bearing the requisite names stamped in raised letters, can now be purchased cheaply. These for practical purposes are indestructible, and may be conveniently nailed to walls or suspended by wires from trellises. For bush and pyramidal trees they are less suitable, as they may be moved by the wind, and the wires, by injuring the bark, prepare the way for canker. For such trees, large wooden labels are sometimes used; the stem is inserted into the ground, but it soon decays. An excellent system of labelling fruit-trees is to procure strips measuring 4 inches by 1½ inch of one-twelfth of an inch sheet-lead; the required names are then punched on to these with a set of ½-inch type letters fixed on to 2-inch iron punches, and by having a similar set of numbers from 0 to 9, the date of planting may also be added. Such labels can be made during wet weather by any intelligent labourer, and are capable of being easily affixed to the trees by curling them loosely around a small branch at a uniform height from the surface. There is no danger of the bark becoming cut, for the lead will expand according to the growth of the branch. They are imperishable, not unduly obtrusive, and can be used for trees against walls or trellises if required. The only attention that need be given them is that of removing the labels to another spot every alternate year, when the pruning of the trees is in hand. This may be done because the bark, so protected, is apt to become somewhat tender beneath. A "planting book" should be kept by every gardener, and it should contain a record of each tree, giving date and place of planting, space being left for the inclusion of any subsequent remarks that may suggest themselves.

FRUITS UNDER GLASS.

By G. NORMAN, Gardener to the Marquess of Salisbury, Hatfield House, Herts.

Late Grapes.—Though the latest-ripened Grapes could be kept in a fresh condition upon the Vines for some further time, it will be now advisable to remove them to the Grape-room, so that the Vines may be pruned whilst there is yet time for the cut parts to heal over before the sap becomes active, and thus prevent bleeding. The Vines should be given as long and complete a rest as possible. If the Grape-room was cleaned as recommended in my Calendar for Dec. 10, the floor and shelves, &c., will now be sufficiently dry; and assuming also that the bottles were three-parts filled with water containing a little powdered charcoal, everything will be ready for the work. Select a fine day for the removal of the Grapes, and cut the young wood that bears the bunches of fruit in the same manner as when pruning, making the incision in front of the prominent bud nearest to the Vine-rod. The wood that extends beyond the bunch should be left intact. During each stage in the operation of removing the Grapes every precaution will be necessary to prevent them from being shaken or rubbed. Examine every bunch carefully, and remove all berries that show signs of decay. Insert the shoots well into the water in the bottles, and see that the water does not reach sufficiently high in the neck of the bottle to run over on to the Grapes. Maintain an evenly dry atmosphere in the room, from about 45° to 50°; and give top ventilation on dry days from sunrise until dusk. In frosty weather fire-heat need only be used a little during the forenoon, and it should not be continued throughout the night unless the weather be extremely cold. The Grapes will need to be very frequently and carefully examined, and the least sign of decay should be removed as soon as it can be detected. In order to make the supply of Grapes last as long as possible, care must be taken to use first the kinds that will not keep so well as others. Muscats may be kept through January, afterwards Gros Colmar, Black Alicante, and Mrs. Pince, and latest of all Lady Downes' Seedling. When the Grapes have been put into the bottle, proceed with the work of pruning and

dressing the Vines. Cleanse the interior of the vinery, and complete the work as soon as possible. Admit abundant and continued ventilation to the house, it being necessary only to prevent the water in the pipes from becoming frozen.

The Early Vinery.—Permanent or pot Vines, the rods of which have been trained horizontally to induce the buds to open regularly, should be trained into position as soon as it is thought this end has been attained. If the work be delayed, it will be difficult to avoid breaking the young shoots. The rods need only be syringed once each fine day, and this work should be done in the morning. The floor and other surfaces may be sprinkled at other times. Increase the temperature of the house to about 55° at night, and 60° by day, with a rise of 10° to 15° from sun-heat. Vines for succession, that are expected to produce ripe Grapes by the end of the month of June, must now be given gentle heat, and treated according to the directions previously given in the case of earlier Vines.

THE FLOWER GARDEN.

By H. WALTERS, Gardener to Lord GERARD, Eastwell Park, Ashford, Kent.

General Remarks.—The recent sharp frosts experienced made it necessary to afford protection to such plants as are not quite hardy in this climate, by covering the tops and mulching the ground over the roots. Tea Roses are reckoned rather tender, and may be covered with dry bracken or straw, and the roots mulched. Recently-planted herbaceous perennials should be mulched with leaf-mould to the depth of an inch. During periods of hard frost, when walks can be wheeled upon without injury, manure should be taken to all beds, borders, and lawns requiring it. In wheeling on the lawn, planks should be laid down to wheel upon. In the case of heavy falls of snow it should be immediately shaken off the branches of Conifers, &c., with long poles bound round at the end with soft rags, so as not to cause injury to the bark whilst it is perhaps frozen. The snow is easily dislodged by raising the branches and then swaying them gently up and down. In mild weather the soil of beds and borders planted with Carnations should be made firm round the plants. Carnations wintering in frames or cold pits should be afforded air at all times when there is no actual frost, the lights being removed when the day is mild. Any plants arriving during frosts when the state of the ground makes it impracticable to plant them, should have the roots covered over with damp litter, or some soil or leaf-mould should be placed over them. Plants arriving in a frozen condition should be left to thaw in a cool damp place, and have water thrown over them. At this season leaf-heaps in process of rotting should be turned over, and the materials well mixed, and in the case of heaps two or more years old the finer particles should be removed by sifting, and conveyed to the soil store, the remainder being thrown together to rot still further.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Dorking.

Platyclinis (Dendrochilon) glumaceum has now commenced to make growth. It is a pretty species of dwarf and compact growth, and its numerous fragrant flowers being set on a long drooping spike, remind one of an ear of Barley. The plants will now require to be in the East Indian-house, and they will succeed either in pots or baskets. Re-potting or re-surfacing may be effected at once, as the young growths emit roots when about 2 inches high, and these will quickly enter the new soil in search of moisture. Unless they are supplied with this essential from the time the young growths appear, and until the flowers have passed, and the growth has become finished, the bulbs will be certain to be less in size than those last made. Fill the pots three-parts with drainage-material, and use ordinary peat and sphagnum-moss for a rooting medium. Sponge the under-sides of the leaves occasionally, or red-spider will be likely to effect mischief. *P. Cobbiana* and *P. uncata*, both of which are now in flower, grow well in shallow pans if suspended during the whole year near to the glass in the intermediate-house. *P. filiformis* should be grown in the same temperature. Although the plant is now at rest, it will need to be kept moist at the root, and if a good overhead syringing be given every week, it will assist to keep the bulbs plump, and the foliage fresh and green.

Dendrobiums.—These plants are always a feature in the Orchid-house when in bloom. For some time past most of the plants have been resting, but now *D. Wardianum*, *D. crassinode*, *D. Aspasia* ×, *D. micans* ×, *D. Wardiano-japonicum* ×, and a few others are already starting into growth, showing their flower-buds on the pseudo-bulbs that were last formed. Notwithstanding these signs of renewed growth, the cultivator should not be tempted to afford them any water unless the flowering bulbs themselves begin to shrivel; nor should such plants be afforded a higher temperature, or the new breaks will grow too rapidly, arresting the full development of the blossoms. Whilst the plants are kept in a moderately dry and cool house, new growth will remain almost stationary. Let each such plant be accustomed to a little more warmth as the flower-buds begin to expand. *Dendrobium moniliforme*, *D. tortile*, *D. heterocarpum* (aureum), the numerous varieties of *D. nobile*, and the garden hybrids, *D. Dominianum*, *D. Juno*, *D. Rainbow*, *D. Ainsworthi*, *D. Cassiope*, *D. splendidissimum grandiflorum*, *D. Schneiderianum*, *D. Leechianum*, *D. endocharis*, *D. melanodiscus*, *D. Luna*, *D. pallens*, *D. Cybele*, *D. Euterpe*, *D. Clío*, *D. chrysodiscus*, *D. xanthocentrum*, *D. Burfordiense*, and others which have not the propensity to start prematurely, may, when their flower-buds appear, be brought from their resting quarters into an intermediate-house, where the temperature at night is kept at about 55°, and here they should stay till the flower-buds begin to expand, and be then removed to the lightest available position in the East Indian-house. Water should be very sparingly afforded to these *Dendrobiums*, as any great excitement at this period may spoil the constitution of many a valuable plant. In houses which are naturally moist, the plants may make good progress without any water being afforded. After the plants are removed to the warmer house, lightly syringe them overhead with tepid rain-water on sunny days till the flowers open. Where many plants of *D. nobile* are cultivated, some of them will now be in bloom, and others approaching that stage, and a regular supply of flowers may be obtained during a period of several months by placing the earliest-ripened plants in gentle warmth as they are required. Such varieties as *D. cretaceum*, *D. crepidatum*, *D. albo-sanguineum*, *D. rhodopterigerum*, *D. Parishii*, *D. superbum*, *D. primum*, *D. Bensoniæ*, *D. nodatum*, and *D. purpureum*, if they are allowed to remain in the East Indian-house whilst at rest, bloom profusely in the spring if they are prevented from shrivelling unduly. If these species are properly matured, but very little water is required by them whilst at rest. *D. undulatum*, *D. stratiotes*, *D. taurinum*, *D. secundum*, *D. amboinense*, *D. bigibbum*, *D. Phalenopsis*, *D. spectabile*, *D. Johnsoniæ*, and *D. velutinum*, should be kept in the hottest house at all times, and be afforded abundance of water whilst growing, and not kept too dry after growth is completed, otherwise the leaves will become spotted. All of these plants bloom from the top of the newly-made growth, and not unfrequently from the old pseudo-bulbs.

The Intermediate-house.—Those plants of *Cypripedium Spicerianum* and *C. Charlesworthi* which have recently passed out of bloom may be repotted if the operation be found necessary. When repotting them let the base of each plant be elevated well above the rim of the pot. In this house *Cypripedium Leeanaum*, *C. L. giganteum*, *C. L. Albertianum*, *C. purpureum*, *C. villosum*, *C. Sallieri*, *Hycanum*, *C. Arthurianum*, *C. vexillarium*, *C. Juno*, *C. Statterianum*, *C. venustum*, *C. calophyllum*, *C. Schlimi*, *C. Williamsii*, *C. insigne*, and its distinct varieties, *C. i. punctatum violaceum*, *C. i. Sanderiæ*, &c., being in full bloom, are making a delightful display. Fortunately, these are plants of easy culture, their chief requirements being well-drained pots and the ordinary sort of Orchid-compost. A rather shady part of the house, and water freely afforded them at all times, is best for them. *Cymbidium Mastersii* and *C. Tracyanum* are also in flower, *C. eburneum* and *C. Lowianum* are showing their spikes. These beautiful species succeed when treated to less heat than is generally afforded them, the coolest part of an intermediate-house, as far away from the hot-water pipes as possible, suits them well. In such case the foliage will remain of a much better colour, and be less liable to spotting than when grown in houses having more warmth. Any plants of these species named which may have become pot-bound should be afforded ample supplies of water at the root at all times. After flowering is a good time to repot them, growth soon recommencing.

General hints on treatment.—The entire collection of Orchids will now require careful treatment in regard to aerial moisture, as any excess, if accompanied by a low temperature, will cause damping and spot; on the other hand, if the ground under the hot-water pipes or the walks is kept too dry, thrips will multiply and soon disfigure the young growths and flower-spikes. Fortunately, it is now of rare occurrence to find rare and valuable Orchids deteriorating through the ravages of insects. XL-All vaporiser is a safe and sure insecticide to use in such cases.

THE APIARY.

By EXPERT.

Protecting Hives during Storms.—We have before described a simple method of guarding against mishaps during storms. A stout stake is driven into the ground on one side of the hive, and to this is attached a rope or strong cord, at the end of which are suspended a couple of bricks. As bee-houses may be very easily upset when standing in the open, those who still practise this form of protection for hives should always drive four strong posts down, one at each corner, about a yard away, to which strong wire or ropes may be fixed as "stays" from September until March. Hives without legs are much less liable to be overturned by the wind, but very ordinary care will prevent mischief happening to hives with legs or on stands; and there are so many disadvantages when floor-boards are directly in contact with the ground that all such should be raised 9 or 10 inches at least during the winter months. Not only are the bees kept in better health thereby, but all the disagreeable things which usually harbour about damp wood, such as snails, woodlice, slugs, &c., are prevented. Precautions should be made against leaky roofs. Snow-water will penetrate through should there be the least fault or crack, and wet quilts usually mean a generally bad condition in the interior. We do not object at all to have hives snowed over for weeks—with entrances snowed up as well for that matter, but directly a thaw comes the accumulated snow should be scraped off and not allowed to gradually melt on hive-roofs, unless it is known that the latter are perfectly watertight. We are every year more impressed with the advantages of keeping bees entirely free from disturbance during December and for three or four months afterwards. In a well-managed apiary nothing, save a glance at entrances, to clear them of dead bees, should be needed. It is well that this is so, for there are such a multitude of odd jobs to occupy the attention of the bee-keeper that we should despair of keeping pace with them if bees required any attention at the same time. In the old times the harvesting of his produce was the main work in the bee-keeper's year; to-day we can give "work for the month" in twelve parts, each one detailing little items of work unknown to our fathers, but which bring more or less advantage to the apiarian, and help to fill up the measure of his success. A great portion, however, of the work during December must necessarily consist of preparations for next season. It will be found most useful if such notes as have been taken in the course of past years are carefully studied, in order to ascertain how far the various plans tried have succeeded or failed. Of course, we do not suppose that every one of our readers trouble to take any notes at all of their beework—many would get on a great deal better if they did. Nevertheless, there is, to our mind, such a fund of never-ending interest in them, and we find them so useful to us in arranging our "work for the month," that we cordially invite those who think it "too much bother" just to try it for a season.

A SWISS POTATO PIE.—Choose medium-sized, sound Potatoes, and after boiling or steaming them in the usual way, allow them to cool; then cut them in slices a quarter-of-an-inch thick, and arrange a single layer of these at the bottom of a well-buttered pie-dish; sprinkle the Potatoes well with salt, pepper, finely-chopped Onion, minced Parsley, and grated cheese, then cover with a few tablespoonfuls of thick white sauce, and repeat in this order until the dish is sufficiently full, letting sauce form the last addition, except a sprinkling of grated cheese, which should be added just before putting the pie in the oven; see that the latter is well heated, then, as soon as the pie is thoroughly hot, and coloured a nice golden-brown, serve tastefully, the surface being sprinkled with a mixture of finely-chopped Parsley and sifted egg-yolk, the pie-dish being placed upon a pretty dish-paper, with a border of Parsley-sprigs arranged round about.

APPOINTMENTS FOR JANUARY.

TUESDAY,	JAN. 10	Royal Horticultural Society's Committees meet. Scottish Horticultural Association meet. Royal Horticultural Society of Ireland meet.
SATURDAY,	JAN. 14	Royal Botanic Society meet. Isle of Wight Horticultural Improvement Soc. (annual meeting).
MONDAY,	JAN. 16	National Chrysanthemum Society's General Committees meet.
THURSDAY,	JAN. 19	Annual Meeting and Election of Pensioners of the Gardeners' Royal Benevolent Institution, at "Simpson's," Strand.
TUESDAY,	JAN. 24	Royal Scottish Arboricultural Society (annual meeting).
SATURDAY,	JAN. 28	Royal Botanic Society meet.
TUESDAY,	JAN. 31	Royal Horticultural Society's Committees meet.

SALES FOR THE ENSUING WEEK.

MONDAY,	JAN. 2	Roses, Hardy Perennials, Lilies, Gloxinias, &c., at Protheroe & Morris' Rooms.
TUESDAY,	JAN. 3	Hardy Border Bulbs and Plants, Roses, Lilies, &c., at Protheroe & Morris' Rooms.
WEDNESDAY,	JAN. 4	Japanese Lilies, Tuberoses, Palm-seeds, Spiræas, Lily of the Valley, &c., at Protheroe & Morris' Rooms.
THURSDAY,	JAN. 5	Hardy Perennials, Iris, Anemones, Carnations, &c., at Protheroe & Morris' Rooms.
FRIDAY,	JAN. 6	English-grown Lilies, Tigridias, Spiræas, Pæonies, and Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—36°5'.

ACTUAL TEMPERATURES:—

LONDON.—December 23 (6 P.M.): Max., 47°; Min., 39°.
PROVINCES.—December 23 (6 P.M.): Max., 48°, Scilly;
Min., 38°, Aberdeen.
Mild, stormy, much rain.

Retrospect.

THE last number of the year offers a fitting occasion to look back to see what progress has been made in the past, and in what hopes we may safely indulge for the coming one.

The chief event of the horticultural year was the great Quinquennial show at Ghent in April. It was characterised by its usual magnificence, and more than its usual magnitude. It was interesting for its display of new plants, described and figured in our columns at the time, and equally if not more so for the exhibition of older plants discovered or introduced by the late JOHN LINDEN, and got together by the filial piety of M. LUCIEN LINDEN. A more worthy tribute to the memory of a botanist and horticulturist can hardly be imagined. The kindness and hospitality of our Belgian friends were as marked as ever. His Majesty the King of the BELGIANS, not content with paying a long and appreciative visit to the exhibition, and renewing his acquaintance with many of the visitors, conferred on the members of the jury the signal honour of inviting them to a garden-party at Laeken on the occasion of the reception of the diplomatic body, the ecclesiastical dignitaries, and the Ministers of State. This was a special honour which was highly appreciated by the guests, the more so as the reception took place in the conservatory and its adjoining corridors, which form so remarkable a feature of the royal residence.

The care of these very extensive glass-houses, including the conservatory-chapel, long entrusted to the late Mr. KNIGHT, is now confided to M. VAN OBERGEN, who deservedly received the congratulations of the visitors.

The occasion of the Ghent Show was made the opportunity for the presentation of the Veitch Memorial Medals, allotted each year to distinguished horticulturists of whatever nation. This time the Medals were conferred on M. le Comte de KERCHOVE, the author of the *Livre des Orchidées*, and the treatise entitled *Les Palmiers*, the energetic, tactful, and genial Presi-

dent of the Botanical and Agricultural Society of Ghent, under whose auspices these quinquennial gatherings are undertaken. Two other Medals were allotted on this occasion, one to M. ED. ANDRÉ, the Editor of the *Revue Horticole*, and distinguished alike as a landscape-gardener and a botanical traveller; the other to M. MARLIAC, the raiser of the very beautiful hybrid Nymphæas, which contribute so largely to the adornment of our gardens.

In comparison to the great Ghent Show, the other exhibitions of the year seem small, though they present some features which even Ghent cannot rival. The fortnightly meetings of the Royal Horticultural Society have been kept up throughout the year in a way which is as satisfactory as it is surprising, and the lectures given before the Society have at least been fully up to the average in interest. A similar remark may be made in relation to the Temple Show in May, and to the Great Fruit Show in the autumn.

The Temple Show of 1898 will always be remembered by a circumstance, the thought of which fills our minds with sorrow and humiliation—we allude to the abstraction of the Orchids belonging to a foreign exhibitor, M. JULES HYE. Although the officials of the Society were not to blame in the matter, this made a most painful impression at the time, and it is a subject for great regret that no tidings have ever been received as to the missing Orchids.

The National Co-operative Show at the Crystal Palace was one of great extent, and much significance, as showing the progress of gardening among the working-classes.

In the provinces equal activity has prevailed, and the great exhibition at Shrewsbury once more attracted the gardeners from all parts of the country, and elicited the warmest commendations. If we fail to mention other towns whose horticultural exhibitions have been noteworthy, it is simply from want of space. The shows have been as numerous and as important as ever, but they are still looked on too exclusively as holiday displays, and opportunities for prize-winning; whilst the educational element is neglected.

In late autumn the Chrysanthemum shows were, as usual, extremely numerous and the quality of the exhibits excellent, and much better than might have been anticipated from the trying nature of the season, and the presence of a rust-fungus on the foliage. There is at present no sign that the taste for these brilliant flowers is on the wane. Indeed, as the flowers increase each year in brilliancy and refinement, we trust the day of their decadence will be long deferred. There is nothing that can take their place for decorative effect at this dull season of the year. Exhibitors need reminding, however, that size by itself is not a recommendation, and that a well-grown, well-flowered plant is a more pleasing object than the abnormal specimens resulting from wholesale disbudding.

The summer and autumn of 1898 were marked, like those of the preceding year, by a prolonged period of heat and drought. So prolonged was it that serious results were anticipated, and, indeed, in many places the want of water was a source of the greatest inconvenience. The effect on the crops, though well marked, was on the whole less injurious than might have been anticipated. Doubtless we have not seen the end of it yet, and for some time to come, sickly and dying trees will testify to the injury inflicted by lack of moisture and by excessive sun-heat in the seasons of 1897 and 1898.

The fruit-crops on the whole were below average, the Apple and Plum-crops notably were reported as deficient, but those who saw the very splendid displays of Apples made at the Royal Horticultural Society's show from Kenby Mr. WOODWARD, gardener at Barham Court, and Messrs. BUNYARD, of Maidstone, might well doubt the existence of any untoward influence. The quality of these fruits was very remarkable, and afforded a proof that good cultivation tells, and that neglect, and bad cultivation, are sure causes of failure.

The stir that has been made of late years in the matter of fruit-culture has had its effect, and may be seen, not only from the enhanced quality of the fruits put on the exhibition-table, but also in the extended area of fruit-production.

Commercially, the year has, we believe, been a prosperous one for the trade. The most important matter for market gardeners is the decision of the Master of the Rolls, reported in full in our columns on March 19, that "buildings" are not rateable as agricultural land. This subject has been discussed before various Judges with varying results, so that it is now proposed, in order to settle the matter finally, to seek the intervention of the House of Lords. It is most devoutly to be hoped that the decision will be favourable to the growers. Few things are more remarkable than the vast development of market gardening under glass during the last quarter of a century. In proportion as agriculture has declined, market gardening has prospered. If the industry is to be throttled by fiscal regulations it is to be feared that home industries will suffer even more severely than they do at present by competition with foreign imports.

The obituary list, always a melancholy record, is perhaps not so heavy as it has been in some other years. The death of JOHN LINDEN at a ripe age removed from us one of the most enterprising of botanical travellers, and one who, by his numerous introductions, has left a name which will be remembered so long as gardening lasts. Amongst other names we find those of Prof. KIRK, the author of *The Forest Flora of New Zealand*; of KERNER the famous Viennese botanist, of Dr. PATERSON the genial Scotch doctor who was so enthusiastic a gardener, of General BERKELEY who inherited the tastes of his famous father, of CULLINGFORD of florist-flower fame, of Baron FERDINAND DE ROTHSCHILD the keen connoisseur, and of many others inserted in our record, but whom it is not necessary to specify on this occasion—their works do live after them.

**** OUR ALMANAC.**—According to our usual practice we shall issue in our next number a *Gardeners' Chronicle Almanac* for the Year 1899. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for the coming year.

BRITISH ASSOCIATION.—The meeting next year is to be held at Dover in September next, under the presidency of Prof. MICHAEL FOSTER. We are glad to learn that the corresponding French society will hold its meetings at Boulogne about the same time, and that an interchange of visits will take place between the members of the two bodies. The more numerous such interchange of courtesies the better for science, and the better for the peoples of the two nationalities.

EGYPT IN PRE-HISTORIC TIMES.—Professor PETRIE has discovered objects in excavating in various parts of Egypt which go to show the existence of a highly-civilised race belonging to a period of about 5000 or even more years, B.C. This race differed from the Egyptians of later date, and is taken to furnish evidence of the close of the pre-historic period, and the developments of the civilisation of Egypt, and the composition of a race which has maintained its character for 6000 years.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held on Monday, January 9, 1899, when the adjourned discussion on the paper, read by Mr. WM. WEAVER (Fellow) at the last meeting, entitled "The London Building Act and the official Supervision of Buildings," will be resumed. The chair will be taken at 8 o'clock. Notice is given that the Institution will be closed from Thursday evening, the 22nd inst., to Wednesday morning, the 28th inst.

"SCIENCE GOSSIP."—After a successful career of over thirty years, *Science Gossip*, the favourite

Society for upwards of twenty years, has retired from his position on account of impaired health. The Committee feel that some expression of the appreciation felt for Mr. LAZENBY's services should be made, and are in consequence organising a testimonial to be presented to Mr. LAZENBY. Those desirous of taking part in this object should place themselves in communication with Mr. B. B. PANNETT 92, Union Terrace, York.

IMPERIAL PENNY POST.—The first despatch of Imperial Penny Post to India and the colonies (except Australia), will carry a letter, expressed in

PORTO RICO.—Very little, says *Nature*, is known of the flora of Porto Rico. An American citizen, Mr. CORNELIUS VANDERBILT, has offered to bear the expense of a botanical expedition to the island by Mr. A. A. HELLER, under the auspices of the Director of the New York Botanical Garden.

A PROPOSED HORTICULTURAL SOCIETY.—At a meeting held recently of the leading gardeners and others in the district of Hamilton, N.B., it was decided that there was need for a local Horticultural and Forestry Association.



FIG. 141.—DENDROBIUM FORMOSUM GIGANTEUM, AT GUNNERSBURY HOUSE, ACTON.

The flower seen in the left-hand corner is specially enlarged. (See p. 472.)

journal for amateurs devoted to Natural, Physical, and Applied Science, has just entered upon independent offices at 110, Strand. This magazine has latterly been greatly improved, and the articles deal with subjects of most recent discovery or theory. The editorial management is still under the control of Mr. JOHN T. CARRINGTON, assisted by Miss F. WINSTONE. There are also several specialists as departmental editors for such sections as Physics, Microscopy, Astronomy, Botany, Geology, Zoology, Meteorology, &c.

ANCIENT SOCIETY OF YORK FLORISTS.—Mr. LAZENBY, who has been the Secretary to the

happy sentiments, to our colonial sisters, which the author of Imperial Penny Post, Mr. HENNIKER HEATON, M.P., has specially written to accompany a message of greeting from the editor of *The Gentlewoman*, which is being sent to every gentlewoman in every British colony, whose name and address were obtainable.

THE METRIC SYSTEM.—The Board of Trade has received information that a large contract for railway work in Norway has been placed in Antwerp owing to the unwillingness of our makers to adopt the simple metrical system in place of the complicated, cumbrous, and inconsequent system followed in the British Isles.

INDEX OF FUNGI.—Another of those colossal publications with which German patience has enriched science is that by Mr. SYDOW, entitled *Index universalis et locupletissimus nominum Plantarum hospitum specierumque omnium Fungorum has inco-lentium*. In other words, it is an alphabetical list of the names of plants, together with an enumeration of the fungi which have been recorded as occurring on each. Thus it appears that the Potato is attacked by no fewer than 105 species of fungi; the Lilac (*Syringa*) by 111; eight pages large 8vo are devoted to the names of fungi attacking the various species of Elm; nine or ten similar pages record the parasites of the Vine and its immediate

allies; twenty-five pages are required for the enumeration of the species attacking the members of the genus *Pinus*—eight pages being occupied with the names of fungi attacking one species, *Pinus silvestris*, and so forth. With such formidable enemies in such prodigious numbers, it is wonderful how plants manage to survive at all. It should be stated that this astonishing index is the index to the descriptive work of SACCARDO, indispensable, but almost stupefying. The book is naturally costly. It may be had from Messrs. WILLIAMS & NORGATE.

ROYAL BOTANIC SOCIETY.—A new departure, as the phrase goes, is announced on the part of the Society. It takes the form of a series of lectures on "Seeds and Seed-testing," by Mr. D. FINLAYSON. The lectures will be delivered in the museum of the Royal Botanic Gardens in the early spring of 1899, on Monday afternoons, at 3.30 P.M., commencing January 23, for the benefit of students of agriculture, horticulture, landscape gardening, and of botany generally. The lectures will deal with the identification and testing of farm and garden-seeds, and the selection of seeds for lawns, cricket-fields, and pasture-land. The following are the proposed arrangements:—

I.—January 23, 1899.—Relative value of samples, considered in relation to colour, size, uniformity, condition, maturity, age, purity of samples, essentials to germination, pedigree influence.

Adulteration and doctoring of seed.

II.—January 30.—Effect of age of seed on its rapidity of growth, and liability to disease. Soil suitable. Change of seed, why necessary. Quantity of seed per acre.

Grass Seeds. *Alopecurus pratensis* (Meadow Foxtail). *Dactylis glomerata* (Rough Cocksfoot). *Festuca elatior* (Tall Fescue).

Impurities specified and described.

III.—February 6.—*Phleum pratense* (Timothy). *Avena elatior* (Tall Oat-grass). *Lolium perenne* (Perennial Rye-grass). *Lolium italicum* (Italian Rye-grass). *Festuca pratensis* (Meadow Fescue).

Impurities specified and described.

IV.—February 13.—*Agrostis stolonifera* (Fiorin). *Avena flavescens* (Yellow Oat-grass). *Poa pratensis* (Smooth-stalked Meadow-grass). *Poa trivialis* (Rough-stalked Meadow-grass). *Poa nemoralis* (Evergreen Meadow-grass). *Poa compressa* (Flat-stemmed Meadow-grass).

Impurities specified and described.

V.—February 20.—*Anthoxanthum odoratum* (Sweet-scented Vernal-grass). *Cynosurus cristatus* (Crested Dogtail). *Festuca rubra* (Red Fescue). *Festuca duriuscula* (Hard Fescue). *Festuca ovina tenuifolia* (Sheep's Fescue).

Impurities specified and described.

VI.—February 27.—Cereals. Wheat, Barley, Oat, Rye.

VII.—March 6.—Clover Seeds. *Trifolium pratense* (Red Clover). *Trifolium pratense perenne* (Perennial Red, or Cow-grass). *Trifolium repens* (White Clover). *Trifolium hybridum* (Alsike Clover). *Medicago lupulina* (Trefoil).

Impurities specified and described.

VIII.—March 13.—*Medicago sativa* (Lucerne). *Onobrychis sativa* (Sainfoin). *Trifolium minus* (Suckling Clover). *Trifolium incarnatum* (Crimson Clover).

IX.—March 20.—Special purpose grasses and other plants, namely:—*Achillea millefolium* (Yarrow). *Anthyllis vulneraria* (Kidney Vetch). *Ammophila arundinacea* (Sand Reed-grass). *Elymus arenarius* (Sea Lyme-grass). *Bromus inermis* (Hungarian Forage grass). *Bromus Schraderi* (Schrader's Brome-grass). *Phalaris arundinacea* (Reed-like Canary-grass). *Poa aquatica*.

(a) Collection of Vegetable Seeds (various).

(b) " Flower " "

X.—March 27.—The best turf produced by seedling and good management. Composition of good and bad mixtures of seeds for Lawns, Cricket-fields, Golf-links, temporary and permanent pastures. Preparation of the soil, selection of suitable seeds, sowing the seed, and after-management.

All the seeds enumerated above can be examined by each individual pupil, as well as growing examples of each plant, and specimens of the finest grass-turf grown from seed.

THE ROYAL GARDENERS' ORPHAN FUND.

A meeting of the Executive Committee was held on the 21st inst. at the Horticultural Club, Mr. W. MARSHALL in the chair, when the following special donations were announced:—Altrincham Gardeners' Society, proceeds of concert, £15 10s.; Scottish Horticultural Association, £15; Canterbury Hospital and Charities' Fête, £5; Mr. H. Herbst, Kew Road, Richmond, box, £5; Chislehurst Gardeners' Society, £3 14s.; Penshurst Gardeners' Society, £3 3s. 6d.; Mr. J. Selway, Betteshanger, box, £2 10s.; Tonbridge Gardeners' Society, £2 2s.; collected at a Committee Meeting of the National Chrysanthemum Society, 16s. 7d.; C. Herrin, Dropmore, Maidenhead, 10s.; Mr. Geo. Cuthbert, Southgate, box, 10s.; Mr. F. Dodds, Herringswell, Mildenhall, box, 7s. 6d. Eighteen applications on behalf of orphan children were made and passed, and it was decided that nine candidates should be elected at the annual meeting on February 17. Mr. THOMAS PEED, of Norwood, was elected a member of the committee in the place of Mr. G. W. CUMMINS (resigned). Mr. A. F. BARRON announced his resignation of the office of secretary to the Fund, and it was resolved that the vacancy should be advertised, and applications invited. A vote of thanks was passed to the chairman.

A HOUSEFUL OF DENDROBIUM FORMOSUM GIGANTEUM.

Our central illustration in the present issue shows a houseful of *Dendrobiums* in Messrs. de Rothschild's garden at Gunnersbury House, Acton, as it appeared in September last, when the plants were at their best. Mr. J. Hudson, the gardener, kindly furnishes the following particulars concerning these plants:—

"At that time there were about 34 plants either in flower or bud, with an aggregate of 680 expanded blooms or buds. The plants were bought from importations during the past two seasons, and were received about the end of the month of March, when they, together with those of last year, were put into as small baskets as it was possible to get them into, and forthwith started into growth under the ordinary stove treatment afforded at that season. I could not give these plants just the position I should have liked, as the fruit crops had first to be considered. Towards the end of the month of May, when a span-roof pot-vinery was cleared of its crop of fruit, they were arranged with others in it. Thence onward till the end of August the plants remained in this house hung up close to the glass, but not touching it, and without any shade whatever being afforded, even during the hottest summer weather. The house has a south-east and north-west aspect, the plants hanging on the latter side of the span, where, although they did not receive the full force of the sun in the early part of the day, they did so during the afternoon, when the house was closed. From the start to the finish hot treatment was afforded; the temperature ranged from 70° to 80° at nightfall and 90° to 95° and even more during the day when air was afforded. When closed, the thermometer frequently indicated 100° to 110° for a space of time. Atmospheric moisture was supplied abundantly, and the plants were frequently dipped in a vessel of water in addition to this. The first few flowers which expanded about the last week in July possessed quite as much substance, and were as large, lasting, too, equally as well as later in the season. The full sunshine seemed to have no effect upon the duration of the flowers, or in any other particular. The growth made under these conditions was robust, and short-jointed. As an indication

that the treatment is suitable to the needs of the species, I might add that I have one plant that was purchased some six years ago, which, under the ordinary stove treatment all the year round, with shade during the summer, gradually declined, and would by this time have died, had it not received the same kind of treatment as my plants of *Dendrobium formosum*, and now it seems to have got a new lease of life. For effect and for convenience sake, the plants, when the photograph was taken, were hung in another house, the roof of which is of the old kind, whereas the vinery in which the plants were grown is quite modern, with panes of glass 20 inches by 15 inches. During the time of flowering, and onwards until May of next year, the treatment given is that of an average plant-stove.

"When out of flower, the plants are kept dry, but the pseudo-bulbs are not allowed to shrivel. Self-sown seedlings are appearing on several of these plants—last year's in particular, some of which I hope to flower next year. In addition to the ordinary compost used for *Dendrobies*, I have made a free use of virgin-cork—a substance that is retentive of moisture, and that does not turn sour; moreover, it affords the plants a perfectly natural rooting medium. It is broken up, and used as is charcoal, only perhaps the pieces are larger."

A NEW COLCHICUM.

WE add a figure of another pretty plant for early spring-flowering, introduced by Mr. Siehe, of Mersina, Asia Minor, who found plants of it in swampy ground and moist meadows, near Gullis, at an altitude of 1000 metres above sea-level. The flowers, of a rosy-red colour, make it, as Mr. Siehe tells us, "a most delightful plant." It should prove a capital addition to our spring flowers. The base of rockeries, where the moisture is usually abundant, by the margin of lakes and streams and similar sites, would suit its requirements. It would be wise to exercise caution in planting the bulb in quantity in land liable to be fed off, the foliage of *Colchicums* being of a poisonous nature. Our illustration (fig. 142) represents the plant of its natural size.

[We have not ourselves seen the plant, so that we can say nothing as to its correct name. Ed.]

RABBITS.*

THE scope of this book is well defined in the preface by Alfred E. T. Watson, who speaks of it as one of a series of Fur, Feather, and Fin monographs, "as complete as they can possibly be made, on the various English birds, beasts, and fishes which are generally included under the head of game." The author starts his rabbit by references from early classic writers, and pursues him through the stages of a short and troubled life to his inevitable end. The book is pleasantly and interestingly written, and the illustrations of varying degrees of excellence.

The portion of the volume that most nearly concerns us here relates to the food of the rabbit; the following extract from the first chapter will, in consequence, interest many readers:—

"Rabbits are unquestionably the kind of stock to make the finest turf; they bite closer than any other animal that grazes, and the best turf for gardens is that taken from warrens, or from downs on which rabbits abounded. Sandy commons covered with Furze are a favourite resort of rabbits, and on such ground they often increase rapidly in numbers. The soil being light and friable, is easily excavated, and the Furze affords not only a secure retreat, but a never-failing supply of food in the young tops of the plants, which are sufficiently tender before the spines have become matured.

In the choice of food, rabbits do not appear to be very particular. They will eat almost anything that is green. Indeed, so destructive are they to most plants and young growing trees, that it is a matter of importance to game-preservers, who want underwood in the coverts as shelter for pheasants, to ascertain what plants are 'rabbit-proof.' Common *Rhododendron*, though not absolutely 'rabbit-proof,' is not so liable to be attacked as many other shrubs. It will grow in shady places better than any other evergreen,

* *The Rabbit*, by James Edmund Harting; with a chapter on cookery by Alexander Innes Shand. Illustrations by Archibald Thorburn, G. E. Lodge, S. Alken, and Charles Whymper (Longmans, Green & Co., 39, Paternoster Row).

especially if the soil is sandy and moist. But, although as a rule, rabbits will not injure Rhododendrons when the latter are well established, they will gnaw them when freshly planted unless protected, like Aucubas. It is said that they will not touch Rhododendron ponticum, even if the plants are small, and the winter severe. Nor will they feed upon Elder, which has the recommendation of growing well under trees, and when plucked (or 'plashed,' as it is termed locally) rabbits will lie well under it. They are not to be trusted near Hollies or young Osiers. Indeed, they seem to be rather partial to Hollies, and in time of snow will attack even old trees. In hard weather, too, both Laurel and Privet suffer from their depredations. The larger kinds of Box, Snowberry-plant (*Symphoricarpos*), and Butcher's-broom (*Ruscus aculeatus*), are recommended where the soil is favourable to their growth; and for wet places, Scarlet Dogwood (*Cornus sanguinea*). In moist woods, too, a good thing to plant is *Carex pendula*, a common Sedge, which forms good evergreen ground-cover, and is very free. In like soil the Wood-rush, Briar, and Wood-grass (*Aira*), may be recommended.

In the way of berried shrubs, nothing is more beautiful than a well-grown specimen of *Cotoneaster affinis*. Every

out of shot, for the reason that there is nothing to hide them. The owner of the covert will, perhaps, say he can get nothing to grow under the spread and drip of the trees. This need not necessarily be so. Several shrubs might be named which will thrive under such conditions; but the planter would be well advised if, instead of scattering the different kinds singly all over the ground at wide distances apart, he were to plant them in clumps—say each plant 3 to 4 feet apart—and a mixture of a few kinds in masses, taking care to keep the low-growing and less straggling sorts next to the wood-rides. Amongst those adapted to such treatment may be mentioned:—Common and Portugal Laurels, Rhododendron ponticum, *Azalea pontica*, *Taxus baccata*, *Ruscus aculeatus* and *R. hypoglossum*, *Cotoneaster buxifolia*, *C. microphylla* and *C. Hookeri*, *Pernettya mucronata* (for peat soils), *Phillyrea* of sorts, *Rhamnus alaternus*, Broom, *Lycocateria formosa*, Box of sorts, *Juniperus communis* and *J. Sabina*, *Potentilla fruticosa*, *Buddleia globosa*, *Viburnum lantana* and *V. Opulus*, *Gaultheria Shallon*, *Ribes* of sorts, *Weigela rosea*, *Euonymus europæus*, *Berberis aquifolium*, *B. dulcis*, *B. Darwini*, *B. vulgaris* and *B. vulgaris purpurea*, *Hippophae rhamnoides* and *H. angustifolia*, *Arbutus Unedo*, *Garrya elliptica*, *Rosa rubiginosa*, *Symphoria racemosa*.

mended the Corsican Pine as the only tree untouched by rabbits where planted with *Pinus sylvestris* and black Austrian Pine; but this only shows that where several different kinds are growing together, the Corsican Pine may be the least appreciated. In a woody district in Sussex, where a field was planted with this, it was found that nearly every plant was gnawed and injured. Although the shoots are not always eaten, they are often nibbled, and pieces taken off the bark, so as to cause the resinous sap to run down.

The unsightly appearance and cost of smearing make it of very little use. Extensive plantations are often formed of small trees less than a foot high, and even if there were both time and means to smear the stems of every one of these little trees with one or other of the compounds which some people recommend, the rabbits would still take off the tops and leave the smeared stumps. The idea is absurd from the standpoint of an extensive planter: for 20,000 trees, of the size referred to, do not go far in planting even a small field.

In young plantations, where rabbits and hares abound, there is nothing so effectual as wire-netting until the trees are strong enough and tall enough to be out of the way of their attacks."



FIG. 142.—COLCHICUM—NEW SPECIES (NAT. SIZE): COLOUR OF THE FLOWERS ROSY-RED. (SEE P. 472.)

year it is laden with bunches of glossy red berries. It is well adapted for planting along the edges of game-coverts, as it affords plenty of food for pheasants, which are very fond of the berries. Probably, the more it is exposed to the influence of the sun, the more freely does it produce its beautiful clusters of fruit.

Apocryph of ornamental plants, we may usefully give here, on the recommendation of Sir Herbert Maxwell (*Memories of the Months*, 1897, p. 92), the following list, which, he tells us, contains well-nigh all the ornamental shrubs which may be relied on to defy the attacks of rabbits, although there are others, such as the American Partridge-berry (*Gaultheria*), and several kinds of Barberry, which, if protected when first planted out, can take care of themselves afterwards:—

'Azalea, Rhododendron, Honeysuckle, Fly Honeysuckle (*Lonicera xylosteum*), Tree Peony, Lilac, Syringa, Snowberry, hardy Fuchsia, Spurge Laurel (*Daphne laureola* and *D. Mezereum*), St. John's Wort, Spindlewood (*Euonymus europæus*), Gueldres Rose (*Viburnum Opulus*), Wayfaring Tree (*Viburnum lantana*), Laurustinus, Cotoneaster, Hawthorn, Dogwood, Sea Buckthorn (*Hippophae rhamnoides*), Spiræa, Deutzia, and all kinds of Ribes and Arbutus.'

Before leaving the subject of shrubs suitable for planting where rabbits and hares are numerous, it may not be superfluous to notice some that will thrive under the drip of trees; for this is a matter of some importance in coverts composed of forest trees of large growth with very little underwood. Here it is not a question of food, but shelter, and nothing is more annoying to shooters when walking through such woods 'in lime' than to see all the ground game going forward, just

A writer in the weekly journal, *Woods and Forest*, remarks:—"It is difficult to get two people to agree as to the trees with which rabbits and hares meddle. Some experienced planters say that these animals cut *Pinus laricio* very much if planted small, but do not touch *Pinus austriaca*. Now, as for the latter, I can confidently assert that they cut it more than any other of the Pine tribe. With me they have attacked and thoroughly destroyed fine plants of it 4 or 5 feet high. A neighbour who has planted *Pinus laricio* (I have none except guarded), says that it is "rabbit-proof," and on his assertion I have now planted some hundreds. The fact is, I believe, in a really severe winter, rabbits will attack anything. In a deep snow I have had Yews eaten down, but in the generality of years certain things escape."

Yews cannot be recommended for planting in game coverts, for although the leaves may be eaten with impunity by rabbits, as in the case with goats, it is otherwise with pheasants, several instances having been reported in which these birds have been picked up dead, and found on examination to have their crops filled, or partly filled, with Yew leaves (see the *Field*, November 25, and December 2, 1876; December 20, 1890; September 17, 1892; and November 11, 1893). Death seems to have been due to the action of the poisonous leaves, producing inflammation of the digestive organs; but why well-fed pheasants should sometimes eat Yew leaves, and on other occasions pass them untouched, it is difficult to explain. Shirley mentions a case in which deer were poisoned by eating Yew, at Badminton, in Gloucestershire (*English Deer Parks*, p. 245).

M. Barbier, of Orleans, writing in December, 1892, recom-

We have cited so long an extract that we have little space left for any further comment. It must suffice to say that the author deals fully with such subjects as rabbit-warrens, the employment of ferrets, rabbit-shooting and trapping, poaching, and, what will be novel to most people, the uses of the goshawk. The legal matters connected with the life and death of poor bunny are summarised, so that altogether a very readable book has been produced, and one which will interest the naturalist as much as the "sportsman."

The illustrations are excellent, and a sufficient index adds greatly to the convenience of the reader.

HOME CORRESPONDENCE.

THIBAUDIA ACUMINATA.—A plant of this beautiful, though somewhat neglected, greenhouse shrub, recently came under my notice. Cultivated in a warm greenhouse, it forms a gorgeous object, and blooms during a period of many months. The leaves, when young, are tinged with purple, changing with age to dark green. The soil best adapted for it is a mixture of sandy peat and fibrous loam. *P. B. W.*, Wentworth Gardens.

DESTRUCTIVENESS OF HARES AND RABBITS.

—In taking down an old number of the *Florist*, written in 1849, I was rather amused at an article written by Mr. Thomas Rivers, The Nurseries, Sawbridgeworth, on the damage done by hares and rabbits, and the temporary prevention secured by brimstone, flags, &c., which, after a time, quite failed. He writes to say he has found a sure and certain protection in putting wire-netting around beds, plants, clumps, &c., the wire-netting 2 feet high, and kept 3 inches from the ground, and he describes how it should be fastened. Since that time rabbits and hares must have been educated up to date, for we have here miles of rabbit-netting, 3 feet high, and let into the ground to a depth of 6 inches, and yet the animals dig beneath it very freely, and hares leap over it, and rabbits put their forelegs up and hop over it in the same way. No doubt wire-netting put round plantations is the best remedy if well watched, but it a long way from being perfect. *N. Kneller, Malshanger.*

ERICA MAWEANA x.—Allow me to correct the statement made by Mr. Bean in his interesting article on Hardy Heaths (see p. 454), that Erica Maweana was discovered in 1882. Mr. George Maw discovered this fine Heath in Portugal, when, I do not know, but I have known this plant in cultivation since September, 1873. There is surely very little reason in supposing it to be a hybrid, least of all that Erica Tetralix has had anything to do with it. Its rarity also is not so evident as supposed, as very recently I saw a large quantity of this beautiful Heath in full bloom, and in splendid condition in that "Home for Hardy Heaths," Messrs. Cunningham & Fraser's Nursery, Comely Bank, Edinburgh. *Robert Lindsay, Kaimies Lodge, Murrayfield, late Curator, Royal Botanic Garden, Edinburgh.*

IRIS RETICULATA IN FLOWER.—I had several Roman Hyacinths, also a plant of the beautiful Iris reticulata, in bloom on Christmas-day in the open garden. I have never heard of the latter coming into flower so early before. It is quite a treat to see it at this season of the year. *David R. Williamson.*

OLD BOOKS ON GARDENING.—Your correspondent on p. 461 may like to know that a copy of presumably the same work, bound up with other papers by this writer, was on sale not long since at a London bookseller's, price 25s. There appear to have been two Austens, Ralph and Francis, who discoursed upon fruit-trees, fruits, and flowers between 1631 and 1676. They both resided at Oxford, and were probably brothers. *D. McDonald.*

COS LETTUCE.—Referring to your note on p. 457, in the searches I have made, the Roman Lettuce seems to have been known to the old-time writers as of the cabbage type. Gerard (1597), illustrates the wild Roman, which certainly bears nearest resemblance to a Cabbage Lettuce. Townsend (1726) says, on p. 11, "The Roman is a good Cabbage Lettuce." Switzer (1729), on p. 236, mentions the Roman and other Cabbage Lettuces. Phillips (1812), p. 319, says, "None are so good to boil or stew as the Roman or Cabbage Lettuce." Cos is the name of an island in the Mediterranean, belonging to Turkey, and it was from here that the original type of the upright and close-growing Lettuce as we know it, derives its title. It was first brought to England in 1532, but seems to have been known to the Dutch previously to this; if so, why not also to the French? *D. McDonald.*

RED LIGHT FOR PLANT-CULTURE.—It has long been known that in the action of light, it is the red rays of the solar spectrum which plays the most important part. [?] This is more particularly the case in the chemical processes undergone in the nutrition of the plant. The process involves the doing of work which cannot be done without energy, and the plant cannot evolve the energy required. The exposure of the plant to light is important, in that it avails itself of the kinetic or radiant energy of the sun's rays, and so obtains the energy required for the chemical work which has to be done. That the red rays are the most important is proved by examining with the spectroscopic light which has passed through a solution of chlorophyll, when the absorption-bands in the red are the most conspicuous. This indicates that the red rays are arrested, and converted into another form of energy, which the protoplasm uses for the construction of a molecule. It is reasonable to suppose that rays of light, other than the red, being prevented from exercising their negative properties on the plant, the result would be beneficial to it, and allow it to

grow on undisturbed; hence the result, that in the same given time, the plant grown in a red light would become larger than that exposed to ordinary light. *G. W. Allen.*

A GREAT GRAPE CLASS.—I read with great pleasure the announcement made in the *Gardeners' Chronicle* for Dec. 3, p. 407, that the Shropshire Horticultural Society intend offering £100, in a class for twelve bunches of Grapes, in six varieties, two bunches of each, to be competed for at the Society's show next August, and I note that the writer of the paragraph expresses a hope "that judges will be less influenced by mere size of bunch than by size, finish, and colour of berry." In reference to this grand class for Grapes, a Grape-grower, who signs himself "Exhibitor" in your last issue (p. 424), remarks that "It is most discouraging to exhibitors of evenly-sized bunches, good in berry, and highly finished, to find that the judges have been carried away by mere size of the bunches, and high quality scarcely recognised." And he asks for the views of others on the subject. I have pleasure in giving mine. There cannot be room for doubt in the mind of any Grape-grower and experienced exhibitor as to the manner in which the prizes should be awarded in a class provided for any given number of bunches of Grapes: they should be given to the best all-round bunches of high quality Grapes then in season—that is, to the large, handsomely shaped, even lot of bunches, consisting of large, well-coloured, and properly finished berries. The largest and best-formed bunches, being equal in other respects to smaller and equally well-shaped bunches, should undoubtedly secure premier award. These latter remarks apply separately to first, second, and third class quality Grapes. And should all three be staged—a class for twelve bunches in six varieties, and two bunches of each—the exhibit consisting mostly of the best quality Grapes, and possessing the points indicated above, should be accorded the chief place of honour. I think my meaning will be better understood if I place two exhibits of twelve bunches each in parallel columns.

Bunches.	Points.	Bunches.	Points.
2 Madresfield Court.....	12	2 Gros Guillaume.....	10
2 Muscat Hamburgh.....	12	2 Black Alicante.....	10
2 Black Hamburgh.....	11	2 Gros Maroc.....	9
2 Gros Guillaume.....	10	2 Gros Coleman.....	9
2 Muscat of Alexandria.....	12	2 Muscat of Alexandria.....	12
2 Buckland Sweetwater.....	10	2 Foster's Seedling.....	10
	67		60

Not being able to lay my hand on the Royal Horticultural Society's code of judging scale of points, I have given a maximum number of 6 points to each bunch of Muscat of Alexandria, Madresfield Court, and Muscat Hamburgh, 5 points to Black Alicante, Gros Guillaume, Foster's Seedling, and Buckland Sweetwater, 5½ to Black Hamburgh, and 4½ to Gros Maroc and Gros Coleman, and with the results indicated. Assuming the best possible examples of the several varieties mentioned to be shown, I think Grape-growing exhibitors will agree that the awards in the above two exhibits are fair. *H. W. Ward, Rayleigh, Dec. 12.*

BRISTOL DISTRICT PROPERTY PROTECTION SOCIETY.—"Our Society was commenced in September, 1892, in consequence of raids organised by Bristol 'roughs,' for the purpose of stealing Mushrooms, grown on pasture-land by a farmer of this district, and during one of which a man was fatally injured. We have now 733 members, about 550 of whom are landowners, agriculturists, and market-gardeners, residing in the adjoining counties of Gloucester and Somerset. As the Society has recently become affiliated with the Central Chamber of Agriculture, the Council have instructed me to forward to each of the seventy Societies now supporting that very important organisation, the following copy of a resolution unanimously passed at a Council meeting, held on the 19th ult.: Resolved—"That the Council of this Society heartily endorse the action taken by the Surrey County Council in regard to the urgent necessity of special legislation for the control and regulation of Gipsies and dwellers in tents, vans, and other portable structures; and urges upon all county and district authorities and agricultural societies the importance of actively supporting such proposed legislation by bringing all the influence possible to bear upon the Home Office and members of the Legislature." . . . One of the first resolutions passed by this Society, and which has been sent out to a very large number of County Councils and agricultural societies, is as follows:—"That, inasmuch as the present law of trespass is ineffectual in preventing the wilful trespass which a

certain class of persons in large centres are in the habit of committing over lands in the neighbourhood of such centres, it is desirable that the law should be amplified so as to extend to cases where anyone found trespassing on enclosed lands in pursuit of, or annexing any product of the soil, whether animal or vegetable, shall be guilty of an offence punishable by Justices, sitting in Petty Sessions, and the onus of any exemption or privilege claimed by such trespasser shall be thrown upon him in any proceedings before such Justices." There is a very strong feeling in this district in favour of the general terms of the proposed Bill that a committee of the Central Chamber has prepared, for the amendment of the law in regard to agricultural fences, and which our Council will consider at its next meeting. Agricultural members of our society are strongly advised to plant Mushroom-spawn upon their pasture fields, so that, when necessary, the taking of Mushrooms can be made a criminal offence under the Larceny Act of 1861, 24 & 25 Vict. c. 96, s. 37. The result has been that convictions have been obtained against Mushroom stealers at all the Petty Sessions in this district, and the following strong remarks by Sir Edward Fry (ex-Lord Justice) as Chairman of the Long Ashton Bench of Magistrates on August 27 last, are of much importance. In stating the decision of the Bench, Sir Edward said:—"The practice of stealing cultivated Mushrooms was still carried on to a considerable extent in that neighbourhood. It was well known to everyone who was listening to him that persons had been convicted in that district many times for a similar offence. Farmers had put up notices, and the defendants must have known it. As far as that Bench was concerned, they did not intend to allow that thing to go on. Each of the defendants would have to pay the highest fine they could inflict, 20s., and costs of the prosecution, or in default go to prison for one month's hard labour. If the practice continued, it was the intention of that Bench, as at present advised, in the future not to fine the offenders, but to send them to prison." United and vigorous action upon these subjects throughout the country is imperative, and I feel sure our council will much appreciate your bringing this communication before the notice of your readers, and making me acquainted with the result at your earliest convenience. *James Hunt, Secretary, 39, Broad Street, Bristol.*"

THE ANCIENT VINEYARDS OF ENGLAND.—With reference to the vineyard existing at Warden, Beds, see ante, p. 449, this was the great Cistercian Abbey of De Sartis and the Blessed Virgin at Warden, near Toddington, Bedfordshire, not far from Dunstable. *W. G. S.*

AUCTIONEERS' BOTANY.

The botany of the average auctioneer is a fearful and a wonderful thing. Some of his names are enough to turn an ordinary professor of botany quite green with envy. Occasionally the name of a plant is correctly given, but this is more through the good luck of a stray shot than anything else. Of course, firms like Protheroe & Morris, and J. C. Stevens, are specialists in horticultural matters, so that their technical terms are reasonably correct. The catalogue of a recent important sale held by a well-known London firm of auctioneers, in a country town, has just come into the present writer's hands, and a very curious compilation it is. Capital letters are almost entirely crebowed; there is a beautiful haziness about the lot which comprises "Two dozen flens repens isolepis and others;" but we can grasp the compiler's meaning in "Two bongainvillea Sindrii." A pan of "Arabia sicholdi" is doubtless something new in the way of a seedling, for the genus itself is unknown in our gardens. Doubtless a "rhynchospermum" and six plants of "streptosolen" are as much the manufacture of the printer as of the cataloguer; but the "freessius refracta elba" is obviously due entirely to the genius of the compiler, and we should be the last in the world to rob him of his creation! As there are thirty "lachenalia tricolor," we will assume that the new way of spelling the generic name is adopted as the plural of Lachenalia, and say nothing of the superfluous u in the specific name. From the entry "Two dozen specimen palms, seaforthia elegans," it might be assumed that all Palms are called Seaforthia elegans, which, we believe, is not the case. Ferns, too, are divided into two sections, maidenhair ferns and pteris;

"*Ophiopogon variagata*" is not the usual way of spelling *Ophiopogon Jaburan variegatus*, and in the specific name there is a painful run on the letter a; whilst "*azalea richoldi*" might have been worse.

The compiler of the catalogue of another important sale just held near London goes to the other extreme, and sprinkles the capital letters about in a manner which must have caused the compositor to use very strong language, especially as the catalogue was printed during the recent very hot weather. The Orchids included a *Cattleya Mossica*, a *Cattleya Mosier*, and several other species not yet known to science; whilst one of the lots was thus entered: "Four Orchids—1 *Cattleya Liabata*, 2 *Cattleya*, and 1 *Intermedia*;" and another lot included "2 painters' brush plants," and yet another "1 *Euphorbia Splendens*." A sale held some little time ago at Kensington included a lot made up of "Twelve *Pan-cratum Paysoni*, 1 *Arundinaria Nitida*, and 2 *Dieffenbachia Barsei*;" another lot was made up of "Eighteen *Isolopes Gracilis*," a second of "Twenty-four *Althemanthera*," and another of "Ninety *Madame Voucher*"—the latter presumably *Pelargoniums*; and this presumption may be extended to the lot catalogued as "Forty double red, 50 double white, 5 oak-leaved, and 26 double pink." This extremely indefinite way of cataloguing, however, might let the unwary purchaser in for a good many things he little contemplated. Other curiosities of this catalogue include "six *Epacris*," and "Twelve Ivy-leaved *Geraniums*, *Souvenir de Chas. Tarnar*." Clearly, the budding auctioneer ought to have a course of lessons in botany before he is allowed to ascend the rostrum—or, what is perhaps better, engage a competent person to do his cataloguing. *W. Roberts.*

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.					(More +) or less (−) than Mean for the Week.	No. of Rainy Days since January 2, 1898.	Total Fall since Jan. 2, 1898.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 2, 1898.
Above (+) or below (−) the Mean for the week ending December 24.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 2, 1898.	Below 42°, difference from Mean since January 2, 1898.						
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.				
0	3 +	24	7	+ 354	− 283	5 +	256	64.4	7	28
1	4 +	8	27	+ 254	− 293	3 −	199	29.4	14	20
2	2 +	8	26	+ 384	− 296	4 −	171	21.4	19	29
3	1 +	3	32	+ 331	− 308	1 −	151	19.5	41	35
4	2 +	7	32	+ 276	− 323	3 −	157	20.6	28	32
5	3 +	11	13	+ 415	− 326	6 −	145	21.6	38	36
6	5 +	25	6	+ 354	− 297	3 −	221	44.5	13	31
7	3 +	20	10	+ 428	− 316	6 −	195	32.7	22	33
8	3 +	26	10	+ 410	− 203	9 −	181	33.4	35	39
9	4 +	23	8	+ 375	− 251	4 −	238	36.9	8	29
10	3 +	28	6	+ 500	− 196	5 −	196	37.7	17	34
*	2 +	33	0	+ 651	− 109	7 −	202	26.3	35	46

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending December 24, is furnished from the Meteorological Office:—

"The weather continued very unsettled and rainy in the extreme northern and north-western parts of the kingdom, but elsewhere it was generally fair and dry, and at many of

our southern and south-eastern stations very clear and bright.

"The temperature was considerably lower than of late, but was still above the mean, the excess ranging from 1° in 'England, E.' to 4° in 'Scotland, E.' and 'Ireland, N.' and to 5° in 'Scotland, W.' The highest of the maxima were recorded on the 18th over 'England,' and on the 23rd or 24th over 'Ireland' and 'Scotland,' they varied from 58° in the 'Midland Counties,' and 57° in 'England, E., and S.' to 51° in 'Scotland, N.' The lowest of the minima, which were registered during the middle of the week in the western and northern districts, and towards its close in the English districts, ranged from 2° in 'England, E.,' 25° in the 'Midland Counties,' and 20° in 'England, S.W.' to 31° in 'England, N.W.' and 36° in the 'Channel Islands.'

"The rainfall was again in excess in 'Scotland, N.' and less than the mean elsewhere; in most parts of 'England' and in the 'Channel Islands' the fall was very slight.

"The bright sunshine was deficient over 'Ireland' and in 'Scotland, N.' and just equal to it in 'Scotland, E., and W.' Over England, however, there was an excess, that in most places being large. The percentage of the possible duration ranged from 41 in 'England, E.' 33 in 'England, S., and 35 in 'England, S.W.' to 14 in 'Scotland, E.' 13 in 'Scotland, W.' 8 in 'Ireland, N.' and 7 in 'Scotland, N.'"

COLONIAL NOTES.

FRUIT TREES GUMMING.

I HAVE been much interested of late in your "Answers to Correspondents" regarding gumming in various English-grown fruit trees. Within the last few years a great deal of interest has been aroused in Jamaica in the culture of various Citrus fruits, chiefly through the increased demand caused by the failure of the crop in Florida through frost. This demand has resulted in large numbers of trees being budded, many species of Citrus being used as stock, and all obtainable varieties of the Orange, "Grape-fruit," Lemon, &c., being used as scions. A great deal of manure has been applied, in many instances, to the land under these trees in order to accelerate the growth of the stocks and buds, and in many cases, it must be said, without any thought as to results. In many of the groves the effect of the manure has been to produce luxuriant growth, but in only too many instances this has been followed by the dreaded gumming, which often means the loss of the young trees. Now what I particularly wish to ascertain is, whether the disease is either insecticous or contagious, or both? also, if buds taken from a tree which has shown symptoms of gum, even if taken from a good, healthy branch, is likely to develop gumming at some future period of its growth, although properly treated in regard to drainage, manure, &c. Is it absolutely necessary for the bark to be punctured by some outside agency before a tree can gum? or might not the bark of a tree, being unhealthy, crack, exude gum, and the evil then be accentuated by ants, &c.? These latter are always found in large numbers on Citrus trees when gumming. *W. Cradwick, Supt. H. p. Gardens, Kingston, Jamaica.*

SOCIETY.

WARGRAVE AND DISTRICT GARDENERS'.

DECEMBER 21.—A fortnightly meeting was held on the above date.

Mr. W. H. Scott (gardener to Captain Coleridge) read a very interesting paper on "Hardy Fruit Cultivation," confining his remarks chiefly to Apples and Pears. Mr. Scott recommended landowners to plant fruit trees in their parks, &c. He explained the best method of planting, and, by means of detached shots, illustrated the right and wrong way to prune the trees. Shears and secateurs as instruments to effect fruit-tree pruning were condemned.

Mr. W. Pope (gardener to J. P. White, Esq., The Willows) exhibited a beautiful group of Begonias, "Gloire de Lorraine," which was much admired.

Obituary.

THOMAS SHINGLES.—We regret to have to announce the death, at midnight on the 27th inst., of Mr. Thomas Shingles. He had been head-gardener at Tortworth for 23 years, and succumbed to an attack of apoplexy after an illness of ten days' duration. Mr. Shingles was an occasional correspondent of this journal.

FOREIGN CORRESPONDENCE.

GERMAN S.W. AFRICA.

GERMINATION OF *WELWITSCHIA*.—The seedling I send is eight weeks old. The proportionally long radicle goes straight down without having in this stage, any fibrous roots. The two cotyledons are, when pushing through the surface of the soil, yellowish coral-red and of cartilaginous consistence; two weeks later on, they become glaucous-violet, and are inconspicuously four-ribbed, the ribs dividing into numerous branches at their uppermost part. Between the cotyledons, two small leaflets make their appearance.

As I have provided a number of European gardens with seeds, I beg leave to give here some hints for their raising. In Riviera-gardens the seeds might be sown even at this advanced season (of course under glass), whilst in Central and Northern Europe, it would be better to wait at least until February. I am convinced that the seeds will retain their germinating power for a very long time; not that I have any practical experience on this point, but because the seeds, which ripen at Hailgamechab amidst the dry Namieb, have here in their natural habitat no opportunity for germinating, and are in a dry atmosphere, and exposed the whole year round to the direct rays of the sun; or if the wind has whirled them into small crevices of the granitic rocks they have to support the radiation from the extremely hot rock. I managed to get forty-three strong and healthy seedlings out of ninety seeds in the following manner:—I dressed a square yard of a sandy bed in the garden with a good quantity of rotten goat's dung, and after having put the seeds on the surface, I covered them an inch thick with sand mixed with dung. After two weeks of daily copious watering, the first plantlet made its appearance, and every day since several have shown their red cotyledons. Even now, when the seedlings are already hardened, and begin to show their first pair of leaves, I water them copiously as before, and I can only state that this treatment seems to be perfectly harmless. Of course, the soil in which they grow is very permeable.

For cultivation under glass it would be best to put a single seed into a deep Hyacinth-pot, filled half with rough pieces of granite, and the upper half with fertile but very sandy soil. After the seeds have germinated in a hot and moist temperature, the pots should be transferred to a dry, airy house, such as the succulent or Cape-house.

There is scarcely any doubt that *Welwitschia* in its natural home is one of those plants doomed to disappear in due time, as is probably also the case with *E-tadium latifolium* in the desert behind Linderitz-bucht. They are plants which certainly have once seen quite different climatic conditions. If no one takes the trouble to introduce such curiosities into other countries under conditions that will suit them, they will have the same fate as the giant birds of Madagascar, and the Kinri and Moa of New Zealand.

Can any of your readers tell me whether imported specimens of *Welwitschia* have been already cultivated in Europe successfully, or whether the plant has been raised from seedlings anywhere. *Dinter, Salem* [For figures of the seedling plants of *Welwitschia*, see *Gardeners' Chronicle*, January 7, 1882, pp. 14, 15. Seedlings have been raised in Portugal and France (Antibes). ED.]

CALIFORNIA.

SAXIFRAGA PELTATA.—I was surprised on reading of the gigantic dimensions of the leaves of this species, which your correspondent reports on August 27. I vividly remember how charmed I was with this plant when coming across it in its home in the Sierra Nevada. And yet the largest leaves I admired were barely 18 inches across. Those plants grew in a deep cañon, closely overshadowed by the tops of gigantic Pines. It grows along all running streams from 3500 up to 4500 feet, as far as I have found out on my botanising trips. If on rocky ground and exposed to sun and

occasional drought, the plants are more rhizome than leaf; and the flower-stalks, sometimes 3 feet high, are but 2 to 20 inches tall at such places. It will lay close on to rocks, running like Ivy, and cling to their supports even in the swiftest of currents, and the roughest of spots of the creek bed. Snow falls even at the lowest place (3500 feet) as deep as several feet yet not as a regular occurrence, the less so as the Sierras are fast drying up owing to the destruction of the timber by the cruel axe of the sawmill men. The summer is very warm in these regions, the thermometer rising even to 95° Fahr. The home of this Saxifraga is in the Abies grandis belt, though not in its higher altitudes. Pinus Sabiniana is too low, reaching only to 2500 feet elevation; but Pinus Lambertiana and ponderosa show their grandest development there. It touches the base of the belt of Sequoia gigantea. I trust these notes from the home of this Saxifraga may be of interest to your cultivators of this stranger in your gardens. Geo. Hansen, Berkeley, California.

MARKETS.

COVENT GARDEN, DECEMBER 29.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arbor Vita, p. doz. 12 0-36 0	Ferns, small, per 100 4 0-6 0
Aspidistras, p. doz. 18 0-26 0	Ficus elastica, each 1 0-3 0
— specimen, each 5 0-10 0	Foliage plants, var. each 1 0-5 0
Dracenas, various, per doz. 12 0-30 0	Lycopodiums, doz. 3 0-1 0
— viridis, p. doz. 9 0-18 0	Marguerites Daisy, per dozen 6 0-8 0
Eucynimus, various, per dozen 6 0-18 0	Myrtles, per doz. 6 0-9 0
Evergreens, in var., per dozen 6 0-24 0	Palms, various, ea. 1 0-15 0
Ferns, in variety, per dozen 4 0-12 0	— specimens, ea. 21 0-23 0
	Scarlets, per doz. 4 0-6 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. 2 6-3 0	Horseradish, English, loose per doz., fine 2 0 —
— Jerusalem, per sieve 1 6-2 0	— foreign, per bundle 1 3 —
— Stachys, or Chinese, p. lb. 0 5 —	Leeks, doz. bunch. 1 6-2 0
Asparagus, Paris, green 4 0 —	Lettuce, Cabbage, per doz. 1 0-1 0
— Spruce 10 —	Mint, new, forced, per doz. bunch. 4 6 —
Beans, Dwf., Channel Islands, lb. 1 6 —	Mushrooms, house, per lb. 0 8-0 10
— French, lb. 0 4 0 6	Onions, Albanians, bags 6 0-6 6
— Maderia, bkt. 3 6 —	— Dutch, per bag 4 6-5 6
Beetroots, per dozen 0 6-0 9	— English, cwt. 5 0-6 6
— bushel 2 0 —	— Valencia, cases 7 6 —
Brussels Sprouts, per sieve 1 6-2 6	— picklers, in bags 2 6 —
— per bushel 3 0-4 0	— in sieve 2 6 —
Brussels tops, bush. 1 0-1 3	Parsley, per dozen 1 0-1 6
Cabbage, doz. 0 9-1 3	— sieve 0 9-1 0
— Coleworts, per bushel 1 6 —	Parsnips, per dozen 0 6-0 9
— Savoy, p. doz. 1 3-2 0	— cwt. bags 8 0 —
— per tally 6 0-8 0	Potatoes, Hebrons, Snowdrops, Up-to-Date, &c., per ton 60 0-80 0
Cardoons, each 0 9-1 0	— New, Algerine, per lb. 0 2-0 3
Cauliflowers, English, per dozen 1 6-2 3	— Frame, lb. 0 6-0 8
— per tally 7 0-10 0	— Tenerife, per cwt. 18 0 —
— Italian, baskets of 18 4 6 —	Radishes, Round, breakfast, per dozen bunches 1 0 —
Celeriac, per dozen 2 0 —	Rhubarb, York, per doz. bunches 2 0 —
Cress, doz. punnets 1 6 —	Salad, small, punnets, per dozen 1 3 —
Carrots, washed, in bags, fine 3 0-3 6	Seakale, per dozen punnets 12 0-18 0
— unwashed 2 0 —	Shallots, per cwt. 8 0-10 0
— Surrey, bunches 2 0-2 6	Spinach, per bushel 5 0 —
Celery, Red, dozen bunches 8 0-16 0	— French, crates 4 0-4 6
— unwashed 8 0-9 0	Tomatoes, English, per lb. 0 4-0 6
Chicory, per lb. 0 3-0 4	— Canary, boxes 1 6-2 0
Chattotas, or Chow Chows, (pronounced Kichotas), doz. 2 0 —	Turnips, Eng., per doz. bunches 2 6 —
Cress, doz. punnets 1 6 —	— in bags 2 0 —
Cucumbers, per doz. 8 0-15 0	Turnip Tops, bag 2 0 —
Endive, French, per dozen 2 0 —	Watercress, p. doz. bunches 0 3-0 6
Garlic, per lb. 0 3 —	
Horseradish, New English, bundle 2 0-2 6	

POTATOES.

Beauties, Saxons, Giants, Up-to-Date, &c., according to sample, 60s. to 80s. per ton; Dunbar Main Crops, 90s. John Bath, 32 and 34, Wellington Street, Covent Garden.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum Lilies, dozen blooms 6 0-8 0	Narcissus, White, p. dozen bunches 2 0-4 0
Asparagus Fern, bun. 2 0-3 0	Oreohids, doz. blooms 6 0-12 0
Azalea, white, 12 buns. 1 0-1 3	Pelargoniums, 12 bunches 6 0-9 0
Bouvardias, per bun. 0 6-0 8	— scarlet, per doz. bunches 8 0-10 0
Carnations, p. doz. blooms 2 0-3 0	Pink Roses, per dozen 4 0-6 0
Eucharis, per dozen 2 0-4 0	Roses (indoor), doz. 1 6-2 0
Gardenias, per doz. 2 0-3 0	— Tea, white doz. 3 0-4 0
Hyacinths, Roman, per doz. bunches 6 0-8 0	— Perle, per doz. 1 0-2 0
Lilium longiflorum, per dozen 6 0-9 0	— Safrano, p. doz. 1 6-2 0
Lily of the Valley, dozen sprays 1 6-2 6	Smilax, per bunch 2 0-3 0
Marguerites, 12 bun. 6 0-8 0	Tuberose, 12 buns. 2 0-3 0
Maidenhair Fern, per doz. bunches 6 0-9 0	Violets, per dozen bunches 1 0-2 0
	— Parma, bunch 4 6-6 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, King, per bush. 5 6-6 0	Cranberries, American, box 12 0 —
— Golden Knobs, bush. 3 0-5 0	— Russian kegs. 1 9 —
— Wellingtons, bush. 5 0-8 0	Custard-Apples, doz. 8 0-12 0
— Sourings, per bushel 4 0-5 0	Grapes, English, Alicante, lb. 1 0-1 6
— Blenheims, per bushel 4 0-7 0	— Gros Colmar 1 3-1 9
— Large cookers, per bushel 4 0 —	— Muscata, per lb. 2 6-4 0
— Nova Scotia, Blenheims, Ribstons, Kings, and other sorts, per barrel 16 0-25 0	— Almeida, brls. 13 0-22 6
— Californian, New Towns, per case 9 0-10 0	Lemons, per case 7 6-15 0
— Canadian, various sorts, Baldwin, Ben Davis, Greenings, &c., per barrel 18 0-25 0	Lyches, Chinese, packet, 1 lb. 1 6 —
Bananas, bunch 6 0-9 0	Oranges, Jaffa, cases 9 6-11 6
Chestnuts, various, per bag 5 6-14 0	— Jamaica, cases 10 0 —
Cobnuts, per 100 lb. 40 0-45 0	— Valencia 7 6-15 0
	— Teueriffe, case 5 0 —
	— Tangerine, box of 25 0 6-1 0
	— box of 108 4 0 —
	Pears, Californian, Easter Beurre, case 18 0 —
	— Do., half-case 8 0 —
	— Glout Morceau, half-case 6 0 —
	— Catillac, French, crates according to number, &c. 7 0-15 0
	Pines, each 2 0-4 0
	Walnuts, kiln-dried, Naples, 5-cwt. 34 0 —

REMARKS.—On Saturday last a brisk trade was done. All green vegetables were in request, and Brussels Sprouts finished well. As usual, there is a brisk demand, and then a reaction. Pines are down in price to-day; other fruits are about the same. Cobnuts are slow, and have a downward tendency; and home-grown Apples, unless fine, are a very slow trade.

(Remainder of Markets carried forward to p. viii.)

NOTICES TO CORRESPONDENTS.

ADDRESS: B. P. Broadway, Ludgate Hill, London.

ARALIA LEPTOPHYLLA: W. J. C. Cuttings of this species root with difficulty. The better way of increase is to graft one-year old pieces on to stocks of A. Guilfoylei or A. reticulata. If you possess Panax Victorie, you might use it as a stock for A. leptophylla.

BOOKS: H. E. T. *How to Lay Out a Garden*, by Kemp; published by Messrs. Bradbury, Agnew & Co., Ltd., Bouverie Street, E.C. *Landscape Gardening*, by H. E. Milner; published by the author, Dulwich Wood, Norwood, S.E.

MILLER'S "DICTIONARY OF GARDENING," BOUND IN LEATHER, AND IN GOOD CONDITION: B. P. Kindly say which edition you possess. There are eight editions.

RASPBERRY PLANTING AND PRUNING: G. S. For full details of the operation, see our issue for December 17, p. 437.

RIPENING OF FRUITS: B. P. The male and other juices become saccharine under the influence of heat and moisture. We know of no small Handbook dealing with the subject.

SOIL: Subscriber, J. F. The soil, of which you send us a sample, might be useful to mix with loam, but it is certainly unsuitable for exclusive use in potting-up plants. We suppose it has been taken from a peaty bog, as it consists almost entirely of the remains of wood.

TRENCHING LAND: K. There is no implement, steam or other, capable of moving land 3 feet deep, or that can take the place of the spade and manual labour. The first time it is dug, if it be virgin soil or ordinary farm land, the lower spits (two) should be dug and manured and left *in situ*, and the upper spit be laid again at the top over manure, but turned over.

TUBEROSES FAILING TO FLOWER SATISFACTORILY: H. B. We consider the soil sent with the tubers deficient in porosity, and was rammed into the pots too tightly; hence it held within its particles moisture in excess of the needs of the tubers, and the evil was aggravated by the lack of drainage materials. One or two crocks do not form a good means of drainage, and in one case that we examined the infiltrating of the fine soil had stopped the outlet of water. We noted the finely-sifted state of the soil. It is good practice sometimes to sift the manure so as to ensure a fairly even distribution of it through the staple, but not to sift the loam. For Tuberoses the loam should contain all its fibre, supposing it to be to - spit, and it should be hand-broken, not sifted; moreover, it is prudent to pot first in large 60's, and repot into large 48's, or small 32's, when a shift becomes necessary.

VIOLETS NOT SUCCEEDING: E. H. C. The plant sent shows that you have not mastered the art of growing the Violet in frames. It is an aged plant, with numerous side shoots instead of a nine months' old plant, consisting of one crown full of vigour, and furnished with ample foliage and no runners at this stage. We fear they will not repay your trouble in cultivating them. In the month of April, when young runners have pushed forth and taken root round the old plants, take up the whole lot, and select three or four of the strongest runners, preferable those with nice young roots, detach them from the plants from which they have sprung, and having manured with leaf-mould or spent dung a piece of partially-shaded land, plant them out 15 inches apart, not in single line, but in double or triple ones, so that as the season advances the foliage will shade the land, and retain moisture about the plants, and to a certain extent prevent attacks from red-spider. Keep the land clean, apply water when it is getting dry, sprinkle the foliage after hot days, and let no runners develop, but pinch them off whilst quite young. Having done this, you will have strong compact plants, which, if carefully planted in early October in the cold frames, will furnish plenty of blooms in winter and spring according to variety.

WEST-INDIAN FRUIT: T. P. The fruits you have seen in Covent Garden Market are those of *Sechium edule* (see fig. 143), well known in the West-Indian Islands, where they are used by the natives as an article of food. We have many times

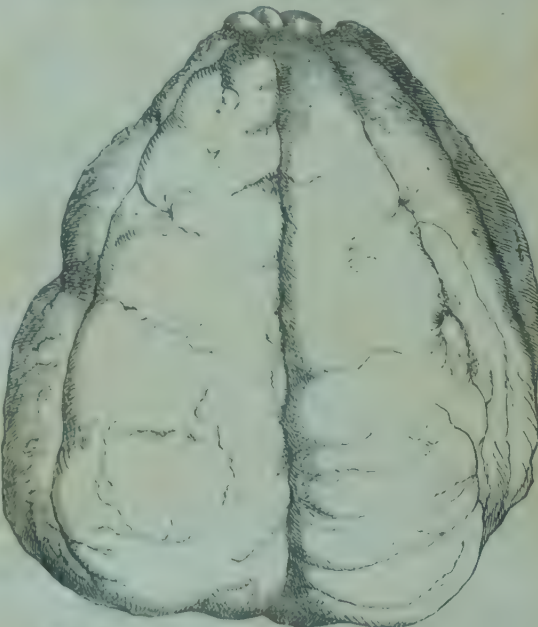


FIG. 143. SECHIMUM EDULE (THE CHOW-CHOW).

observed fresh specimens in the market here, and they are sometimes called Chow-chow, Chaco, Chayoto, &c. The fruit is somewhat of the nature of a Vegetable-Marrow, but has firmer flesh, and, in consequence, is more useful for use in pickling. The plant belongs to the Natural Order Cucurbitaceae.

COMMUNICATIONS RECEIVED.—D. T. F., next week.—Herb & Wills.—D. H. D.—C. T. D.—H. R.—J. C. S., Alameda.—O. Edward.—R. D.—A. C. F.—A. R. P.—J. S. U.—W. B. H.—G. C.—A. D.—F. C. S.—D. R. W.—C. N. M.—J. G.—J. A.—G. D.

DIED.—On the 20th December, unexpectedly, after an operation, JOHN TURNER, youngest son of C. Harman, Payne.

